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The Darwin Continuum:

The Influence of Charles Darwin on Victorian and Neo-Victorian Fiction

A thesis

submitted in fulfilment

of the requirements for the degree

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Abstract

In 1859 Charles Darwin challenged the Victorian worldview with his first controversial publication, *On the Origin of Species by Means of Natural Selection.* The Victorian understanding of species-relatedness had primarily rested on the biblical idea of species-specific design by God, in which animals are considered wholly separate, and unrelated to, the human species. *The Origin* outlines the conflicting theory of evolution by natural selection, whereby animal species descend from one another over time, in response to factors such as climate, resource availability, and competition. Darwin thus suggests the mutability and connectivity of species. *The Origin* does not explicitly address human evolution. It does, however, imply that humanity is not exempt from possessing animal ancestry. The apparent need for empathy, respect and equality across all species is emphasised. Human evolution was given greater attention in Darwin's second work, *The Descent of Man and, and Selection in Relation to Sex* (1871).

Herbert Spencer regarded natural selection as the 'survival of the fittest', a term which Darwin adopted in his fifth edition of *The Origin* in 1869. Described within *The Origin* as the survival of those better adapted for an immediate local environment, Darwin did not intend for the idea to transcend biology. Spencer, however, believed that survival of the fittest could be applied to sociology, and thus, as Social Darwinism, it became connected to ideas of racial superiority, eugenics, and justified genocide.

This thesis aims to analyse the nature of Darwin's influence on novelists from the nineteenth century to present day. Of particular focus is how his ideas are represented and, on occasion, altered in the work of creative writers. The first half of this thesis focuses on late nineteenth-century authors writing in the

immediate wake of *The Origin*. These novelists were inevitably influenced by Darwin's ideas. Their fiction reflects both the Victorian fascination with Darwin, and the cultural, social, and theological unease that his theories stirred. Chapter One examines H.G. Wells' *The Time Machine* (1895), *The Island of Dr. Moreau* (1896), and *War of the Worlds* (1898), highlighting Wells' intimate knowledge of Darwin's theories, but also Wells' anxieties about devolution and extinction. In Chapter Two attention turns to five late nineteenth and early twentieth-century novelists writing scientific romances and gothic fiction. Charles Kingsley's *Water Babies* (1863), Samuel Butler's *Erewhon* (1872), Robert Louis Stevenson's *The Strange Case of Dr. Jekyll and Mr Hyde* (1886), Bram Stoker's *Dracula* (1897), and Arthur Conan Doyle's *The Lost World* (1912) all exhibit respect for Darwin as a scientist, whilst also echoing Wells' anxieties for the possible degeneration and regression of humanity.

Having established these nineteenth-century contexts, I then move forward more than a century to explore neo-Victorian re-imaginings of Darwin and his ideas. Chapter Three focuses on *The French Lieutenant's Woman* (1969) by John Fowles; *Morpho Eugenia* (1992) by A.S. Byatt; *This Thing of Darkness* (2005) by Harry Thompson; *The Darwin Conspiracy* by John Darnton (2005); and *The Naturalist* (2014) by Thom Conroy. These works showcase contemporary acceptance of many of Darwin's views. Repulsion towards the way in which Darwin's theories were applied in relation to issues of race creates a tension in these works, with Darwin perpetually mediated through a late twentieth and early twenty-first century lens. A similar self-reflexivity is evident in the Steampunk authors discussed in Chapter Four. In K.W. Jeter's *Morlock Night* (1979), Scott Westerfeld's *Leviathan* trilogy (2009-2011), and Mark Hodder's *The Strange*

Affair of Spring Heeled Jack (2010), however, the seriousness of the neo-Victorians gives way to a playful spirit of fun.

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Introduction

Charles Darwin's *On the Origin of Species by Means of Natural Selection* (1859) and *The Descent of Man, and Selection in Relation to Sex* (1871) revolutionised the world of science in the nineteenth century, and profoundly affected thinking about religion, culture, and society. Many nineteenth-century novels discuss, debate, and even, on some occasions, challenge Darwin's ideas. Darwin's literary legacy continues to the present day, with writers of neo-Victorian fiction similarly drawing on Darwin's theories in their evocations of the past.

This thesis explores the influence of Darwin on authors writing in two discrete but interconnected historical moments. The first half of this thesis focuses on nineteenth-century authors writing scientific romance and gothic fiction, namely: H.G. Wells, Samuel Butler, Charles Kingsley, Arthur Conan Doyle, Robert Louis Stevenson, and Bram Stoker. I then leap forward to more recent depictions of Darwin in neo-Victorian texts, both metafictional narratives by A.S. Byatt, John Darnton, John Fowles, Harry Thompson, and Thom Conroy which are alert to the shifts in thinking since Darwin's day, and the more playful appropriations of Darwin by Steampunk authors such as K.W. Jeter, Scott Westerfeld, and Mark Hodder. The central focus of this introduction will be on Darwin's key theories, which underpin all of the fiction considered in this thesis. However, before turning to this foundation for analysis, I briefly highlight the key genre terms relevant to my thesis and the gaps in research knowledge that my discussion seeks to fill.

The first two genres I explore in this thesis, and which need careful definition, were popular in the nineteenth century. Indeed, scientific romance is a specifically late nineteenth-century genre, encompassing fiction and non-fiction

which draws upon 'scientific speculations'.[1] Brian Stableford defines scientific romance as:

> the romance of the disenchanted universe: a universe in which new things can and must appear by virtue of the discoveries of scientists and the ingenuity of inventors, and a universe where alien races are populated according to the logic of the theory of evolution.[2]

As Stableford emphasises, Darwin's theory of evolution by natural selection appealed to writers with its controversial 'dramatic appeal', created by the perceived 'ultimate conflict between science and religion'.[3] Preferring to classify his novels as 'Fantastic and Imaginative Romances', H.G. Wells initially resisted the scientific romance genre label, until 1933, when he allowed a collection of his works to be published under the title *The Scientific Romances of H.G. Wells*. In the 1920s the term 'science fiction' all but superseded 'scientific romance'. There are, however, key distinctions between the two terms, the most notable being the lack of 'Space Age' discourse in scientific romances, and the greater emphasis on the fantastical rather than the probable, which the 'romance' label signals. Significantly, scientific romances are usually 'darker', and depict a 'shrinking' or more dystopian future than science fiction.[4]

Darkness is likewise a feature of gothic literature, which traditionally includes 'negative aesthetics', one crucial example of this being 'an absence of light'.[5] Nineteenth-century gothic texts, and their more recent successors, typically contain characters who suffer from 'madness, bloodlust', 'bestiality', and an absence of morality. These character tropes, coupled with an 'abundance' of 'monstrosity', are common themes across all gothic fiction.[6] Darwin's theory of evolution is said to have 'legitimated' these afflictions with the rise of

evolutionist psychology, in the sense that a biological and heritable (but not necessarily correct) basis could be found for such afflictions.[7]

Neo-Victorian literature is an example of a recent 'birth' of a genre. This term is so named because it encompasses the way in which the genre amalgamates past and present without overriding the characteristics of the former.[8] Neo-Victorian texts 'reinsert the Victorians into their historical context', and in doing so 'reveal both the continuities and discontinuities between the Victorian past and the present'.[9] To show these continuities and discontinuities, neo-Victorian texts typically place the modern reader into unfamiliar situations, wherein the stark contrasts between modern and Victorian values come to light, and the similarities between the two eras are—in effect—sieved out.[10] Some of the carry-over issues between the two eras include those concerning: identity; environmental and genetic conditioning; repressed and oppressed sexuality; crime and violence; law and authority; and science and religion.[11] For the purpose of this thesis, I have defined neo-Victorian texts as those which are written after 1960 (the decade which saw the publication of what many critics regard as the first neo-Victorian text, Jean Rhys' *Wide Sargasso Sea*) and are set in the Victorian period of 1837 until 1901.[12]

Steampunk is another recent genre innovation. An offshoot of neo-Victorian fiction, Steampunk combines 'colonial and empire-based fiction' with 'large … heavy … dirty', 'steam-based technology', in order to 'expand the role of the colonised and otherwise subjugated in that era (girl geniuses, for example)'.[13] The overarching sense of adventure is much stronger in Steampunk than in other neo-Victorian texts, owing to the fact that Steampunk shuns historical accuracy in favour of alternate history. Steampunk also defies the 'scientific accuracy, theory, and logic' found in much science fiction, because it

'leaves much more room for madcap fantasy, strangeness, and escapism'.[14] This is where the 'damned good fun' of Steampunk comes in, as historical moments in time are able to be manipulated, and historical figures such as Darwin are awarded a kind of tongue-in-cheek disregard for fact.[15] Steampunk also plays with the scientific theories and practices of the past, combining it with contemporary knowledge to produce fantastical modes of experimentation and inventions and creatures which are impossible as of yet.

My research shows that there was a lull in the production of Victorian-aestheticised Darwin-related fiction in the twentieth century, and, indeed, it seems that 'as we move further away from the Victorian, the ideas of the period come to haunt us more deeply and in unexpected ways'.[16] I do not claim to know exactly why this is the case, but the carry-over societal issues between the two eras, as discussed previously, seem to be a large part of why 'we make the ghosts speak — or speak for them'.[17]

The purpose of this thesis is to explore Victorian and neo-Victorian texts in rigorous detail, and tease out specific textual examples of six key Darwinian ideas. By doing so I hope to demonstrate the impact that Darwin, and his theories, had upon Victorian and neo-Victorian authors from 1859 to the present day. Before Darwin's impact in literature can be discussed at length, there are key distinctions which I must make between the terms 'Darwinian' and 'Darwinism'. The term 'Darwinian' is used throughout this thesis to evoke Darwin's theories; for example, 'evolution' is Darwinian. In contrast, 'Darwinism' implies socio-cultural misappropriations of his theories, such as Social Darwinism, or racism 'justified' by evolution.

I have chosen to focus on the nineteenth-century genres of scientific romance and gothic fiction, and the more contemporary genres of neo-Victorian

literature and Steampunk, because they provide a lens through which to explore impressions of, and reactions to, Darwin in two very different eras. Crucially, all of the texts considered in this thesis are set in the nineteenth century. I am thus able to contrast the more immediate fictional meditations on Darwin and his theories with more recent evocations of an era and a man that continue to fascinate. There are, of course, many early and mid-twentieth-century novels, particularly science fiction texts, imbued with Darwin's thinking (Aldous Huxley's *Brave New World* [1932] is perhaps the most famous example) but these do not meet one of the fundamental criteria of my analysis: the Victorian setting.

The Darwinian inclination evident in some nineteenth century realist novels, such as George Eliot's *Middlemarch* (1874), and Thomas Hardy's *Tess of the D'Urbervilles* (1891), has been the subject of much scholarship.[18] This link between science and literature has also been studied in the work of prominent nineteenth-century scientific romance authors such as H.G. Wells. Wells' *The Time Machine* (1895), *The Island of Dr Moreau* (1896), and *War of the Worlds* (1898) are widely acknowledged as being 'underpinned by a Darwinian understanding of evolution'.[19] Critics such as Amanda Mordavsky Caleb, for example, cite the Darwin-inspired theory of animal instinct versus human morality in Wells' essay 'Human Evolution, An Artificial Process' (1896) as a core theme of *The Island of Dr Moreau*.[20] My discussion of Wells' texts will draw upon existing scholarship in order to highlight Darwin's profound influence on nineteenth-century scientific romance texts. I hope to contribute some fresh textual examples of this influence to the wider body of scholarship on Darwin and Wells.

The wealth of material on Darwin and Wells is mirrored by the scholarship on Darwin and Samuel Butler, Charles Kingsley, Robert Louis Stevenson, and

Arthur Conan Doyle. Scholars such as Glenn O. Carey and Hans-Peter Breuer look at how Butler's own evolutionary theory was shaped by Darwin's *Origin*, resulting in evolutionary narratives like 'Book of Machines', in *Erewhon* (1872).[21] Christopher Hamlin writes of how Kingsley is widely regarded as an 'early Darwinian', arguing that he is an example of the way in which Darwin's ideas can be reconciled with '[C]hanging the world via sermon', as he was an orthodox Christian.[22] According to scholars such as Patricia Ferrer-Medina, Stevenson's *Dr Jekyll and Mr Hyde* (1866) critiques the way in which, from a pre-Darwinian, or anti-Darwinian perspective, 'the human and the animal are … organized within the figure in a … binary opposition'. This highlights the way in which a Darwinian understanding renders this binary as 'false'.[23] Doyle described Darwin's influence in his life as 'overwhelming', but also acknowledged that 'even the man in the street felt the strong sweeping current of [Darwin's] thought'.[24] Stefan Lampadius shares this view, commenting that '[H]ardly anyone' in post-*Origin* Victorian Britain 'was not somehow influenced … by the rise of evolutionary theory'.[25] It is statements such as this which are the driving force behind this thesis.

Charles S. Blinderman's article 'Vampurella: Darwin and Count Dracula' discusses Bram Stoker's *Dracula* (1897) in relation to 'Darwinian materialism', or 'the conflict between spirit and flesh'.[26] In addition, John Glendening discusses the way in which *Dracula* highlights the anxieties around 'primitiveness', which stemmed from Darwin's theories. Despite this, the amount of scholarship analysing the influence of Darwin's myriad theories on *Dracula* 'has been insufficiently appreciated'.[27] I endeavour to offer fresh insight into the impact of Darwin on *Dracula*, in the hope of making a valuable contribution to the wider body of scholarship in the field.

Darwin's impact is also found in twenty-first-century novels, but whilst nineteenth-century authors drew upon the immediate anxieties created by Darwin's theories, neo-Victorian novelists are able to explore the realm of the biographical by appropriating Darwin himself as a character. Neo-Victorian writers also write from the perspective of the twentieth or twenty-first century, which provides a lens through which Darwin's ideas may be reinterpreted and reapplied. In comparison to Victorian texts, neo-Victorian texts prove to be far more overt in their discussions of Darwin and his ideas, partly owing to the fact that his theory of evolution is now the core of worldwide contemporary biological studies.

Scholarship on Darwin's impact in neo-Victorian texts is still underexplored, as the term 'neo-Victorian' is only around twenty years old.[28] There is, however, a growing interest in the genre, and debates rage over whether or not historical fiction novels can be included in this category. Ann Heilmann and Mark Llewellyn argue that historical fiction should not be considered neo-Victorian, because such novels 'lack imaginative re-engagement with the period'.[29] This is a rather narrow view, privileging post-modern, metafictional novels, such as *The French Lieutenant's Woman* (1969) by John Fowles, which met with the critics' approval. Heilmann and Llewellyn recognise Fowles' novel as a neo-Victorian text, because it uses a modern narrator in order to critique certain aspects of Victorian society, such as issues around sex and religion.[30] I include this novel in my research as it demonstrates the continued use of Darwin's ideas in fiction, and the change in the way in which these ideas are portrayed. Likewise, John Darnton's *The Darwin Conspiracy* (2005) plays with both historical time and historical fact, juxtaposing a contemporary and a nineteenth-century narrative in order to recast Darwin as a plagiarist. While the Darwinian

themes in Fowle's novel have received attention by critics such as Qiming Ji, Ming Li, and Naomi Rokotnitz, Darnton's text has been ignored, a state that I seek to remedy.[31]

Unlike Heilmann and Llewelyn, I do not exclude texts with a less meta-fictional playing of the past against the present from the neo-Victorian rubric. I discuss several novels that can properly be described as 'historical fiction' in that they plunge the reader into the nineteenth century without a mediating modern narrator or a split narrative. However, these novels are as alert to the disjunctions and continuities between past and present as those with a more overt foregrounding of these issues.

This Thing of Darkness (2005), by Harry Thompson, has been described by José Angel García Landa as an 'historical fiction on Darwin's *Beagle* voyage'. It is but one of several neo-Victorian texts which appropriate this voyage in order to offer imaginary insight into Darwin's thoughts.[32] *Morpho Eugenia* (1992), by A.S. Byatt, is a text which is often referred to as 'post-modern', but it does not neatly fit into this category, as unlike typical postmodern texts which use 'fluctuating narrative perspectives, paradox, ambiguity, and self-reflexivity', *Morpho Eugenia* is 'firmly set in the past', and thus presents more like an historical fiction.[33] I am interested in its capacity as a Darwinian historical fiction, specifically. There is no published scholarship on the relationship between Darwin and *The Naturalist* (2014), by Thom Conroy, as, although it is saturated in Darwinian ideas, it is a very recent text. My discussion of this text in Chapter Three thus creates a context for future discussions.

Like 'neo-Victorian', 'Steampunk' as a genre label is, as previously mentioned, still relatively new. As Tim Powers points out, *Morlock Night* (1979) is widely regarded as the first Steampunk text, because its author, K.W. Jeter,

coined the term.[34] Despite more than thirty years having passed in which critics could have published thoughts on Darwin and Jeter, I have not encountered any scholarship which deals specifically with this issue, pointing to the way in which Steampunk has traditionally been regarded as a more populist and quirky genre. In the past decade this perception has been changing, with critics such as Rachel A. Bowser, Brian Croxall, and Ekaterina Sedia exploring the phenomenon, but Jeter remains a largely ignored figure by the scholarly community. *Morlock Night* most definitely appropriates those Darwinian concepts which are present in *The Time Machine*, as although it is an Arthurian tale, some regard *Morlock Night* as a 'wild sequel' to Wells, and I believe that the repetition of similar ideas is the reason why there is a lack of Darwin-related scholarship on *Morlock Night*. [35] I point out similarities between the texts in this thesis, but I chiefly aim to contribute new thoughts on the influence of Darwin on Jeter.

Scott Westerfeld's *Leviathan Trilogy* (2009-2011) has been described by James Blasingame as being 'based on historical factual people and events', whilst also subverting Darwin's ideas with 'Darwinists, who use genetic manipulation to create creatures for every purpose'.[36] The impact of Darwin's ideas in this series is thus explicit, and I hope to provide fresh textual examples in order to highlight exactly how Darwin's theories have been subverted, and how Darwin, as a historical figure, is represented. I have not found any scholarship that comments on the depiction of Darwin in Mark Hodder's *The Strange Affair of Spring Heeled Jack* (2010), despite Darwin featuring as a character, and my discussion goes some way to addressing this gap.

In order to conduct this research I have pinpointed key Darwinian theories that have had a profound influence on science and society. There are myriad ideas explored within *The Origin* and *The Descent*, but I shall focus on six: evolution

and selection; the history of humanity; comparing species; the struggle for existence; reversion, and extinction. These six headings encapsulate the core of Darwin's thinking and by exploring the presence, or absence, of each in my chosen fiction I am able to trace shifting attitudes towards Darwin. In order to examine the literary engagement with each theme it is necessary to first have a firm understanding of both Darwin's thinking, and the ways in which his ideas have been appropriated by others. I thus now provide an overview of each of these crucial themes, emphasising Darwin's pivotal influence on the development of scientific thought whilst also clarifying some areas of confusion where popular perceptions of Darwin have distorted his actual theories.

Evolution and Selection

William Paley, a Victorian clergyman, is famous for his 1802 watchmaker argument, or the idea that 'things which show design have designers'.[37] This is in keeping with the Victorian worldview that the Bible is divine revelation. Darwin went against this idea, positing the theory of evolution, or the idea that 'each species had not been independently created, but had descended, like varieties, from other species'.[38] The fossils which Darwin discovered whilst exploring South America aboard the *Beagle* (under the command of Captain Robert FitzRoy) contributed significantly to the formation of Darwin's theory. Over three years Darwin documented 'the affinity of fossils to living organisms', and regarded them as 'evidence for evolution and mutability'.[39]

The mechanism for this, according to Darwin, is 'Natural Selection', or the natural 'preservation of favourable variations and the rejection of injurious variations' which 'can act only through and for the good of each being'.[40] In the fifth edition of *The Origin*, Darwin borrows Herbert Spencer's term, the 'survival

of the fittest'.[41] Spencer coined this term after reading earlier editions of *The Origin*, intending for it to be interchangeable with the phrase natural selection. 'Fitness', in a biological sense, simply refers to an organism's ability to survive and reproduce.[42]

It is crucial to mention famed naturalist and biologist Alfred Russell Wallace when discussing nineteenth-century contributions to evolutionary theory. Wallace co-discovered the 'novel hypothesis on the driving force of organismic evolution'.[43] His theory was not 'identical' to that of Darwin, and the two men formulated their similar theories independently. Nevertheless, they must both be credited with having discovered the mechanism for evolution.[44]

French naturalist Jean-Baptiste Lamarck's theory of evolution is also of great importance to Darwinian scholars, as it is regarded as the first 'genuine theory of the transformation of species by natural means'.[45] This does not mean that it was correct, and it has since been disproven. Lamarck postulated that 'adaptation[s] to living conditions … are then inherited by the next generation'.[46] This is non-Darwinian, as it implies that inheritance is driven by environmental changes. Darwin, in contrast, advocated 'random variability', or random occurrences of advantageous adaptations which could then appear in future generations.[47] Darwin's concept of evolution had been largely accepted by the Western scientific world by the late nineteenth century. [48]

In *The Origin*, the 'entangled bank', or 'harmonious' interconnectivity of all species is introduced. This concept was advocated by Darwin's contemporary, the German biologist Ernst Haeckel.[49] Haeckel was accused of 'scientific dishonesty' by Swiss zoologist Ludwig Rütimeyer, owing in part to his views on the hierarchy of "races", and the way in which his views fuelled Social Darwinism.[50] The final contemporary of Darwin who must be acknowledged here

is T.H. Huxley, one of 'the ablest popularisers of science in his day'. Huxley was a great supporter and friend of Darwin, and was informally known as 'Darwin's bulldog'.[51]

The origin of evolutionary thought cannot be pinpointed to one discrete source, but the scholarship suggests such ideas emerged in Ancient Greece. Although the concept of a 'divine artist' was widely accepted at this time, Anaximander, an ancient Greek philosopher, believed that early creatures were 'born of' the earth, and thus humanity had been born of other species.[52] A century later, Empedocles followed this train of thought, regarding the elements that he could observe, namely 'earth, air, fire, and water', as the four 'roots' from which all organisms originated.[53] Additionally, his poems *Physics* and *Katharmoi* embody the themes of common descent and kinship between all living things.[54] Aristotle also spoke of evolution. In his book titled *History of Animals*, he compared and contrasted animals in order to distinguish relationships between them. He recognised that 'the ape, the monkey, and the baboon … share properties of man'. He also believed in the conflicting concept of *Scala Naturae* or the idea that evolution is a descending scale of perfection, with God and humans at the top, and plants and minerals at the bottom. This idea continued to underpin scientific belief well into the Medieval and Renaissance world.[55]

Roman philosopher Lucretius also advocated the organic earthly birth of humanity put forward by his Greek predecessors, and recognised that a range of factors ensure survival. In his view these were: food supply, reproductive organs, and a means of copulation.[56]

Humans first became known as '*Homo sapiens'* in the eighteenth century, a term coined by Swedish botanist Carl Linnaeus. Based on morphological and anatomical studies, Linnaeus was the first to put forward the idea that humans

were most closely related to the great apes.[57] This mode of thinking had a profound influence on Darwin's grandfather, Erasmus, the leading physicist of the 1790s.[58] In regards to evolution, Erasmus provided many insights, which he expressed, in part, through poetry. His most famous evolutionary poems include *Loves of the Plants* (1791), and the posthumously published *Temple of Nature* (1802). The former expresses the importance of sexual reproduction in evolution, the latter of evolution as a progression from the less complex to the most complex. Erasmus' book *Zoonomia* (1794-96) also talks of progressive evolution, and the possibility of an ancient common origin from which all living things evolved.

Augustin Augier was the first known naturalist to portray species on a tree-like diagram. His *Arbre Botanique* (botanical tree) was constructed in 1801 and conformed to *Scala Naturae* in that it depicted mosses at the bottom and the 'most perfect' plants at the top.[59] Augier was not well known, and thus it was unlikely that Charles Darwin adopted Augier's design.

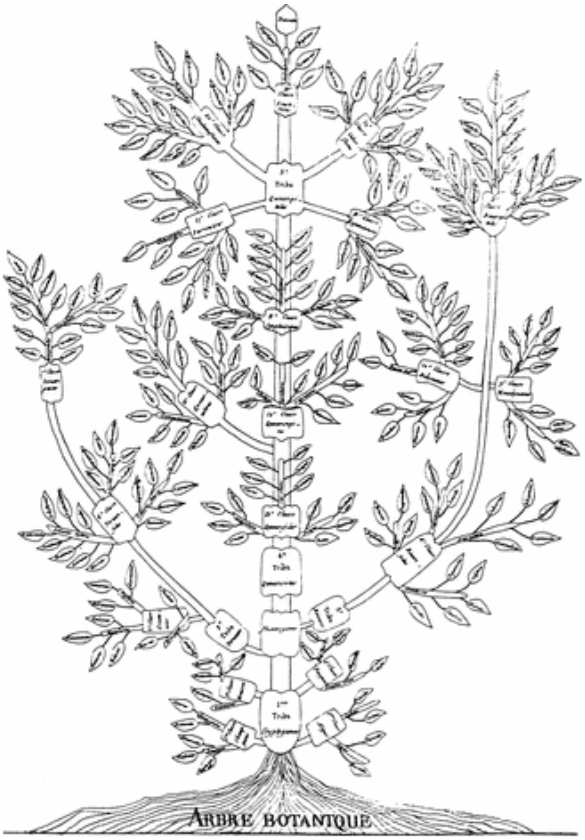

Figure 1: Augustin Augier, *Botanical Tree* (1801)

Lamarck was the next to depict species on a branching diagram and, indeed, was the first to depict animals in this way. His diagram only showed four branches stemming from the trunk, and it was labelled a ‘tableau’ (table) rather than a tree. In this way it also conformed to *Scala Naturae*.

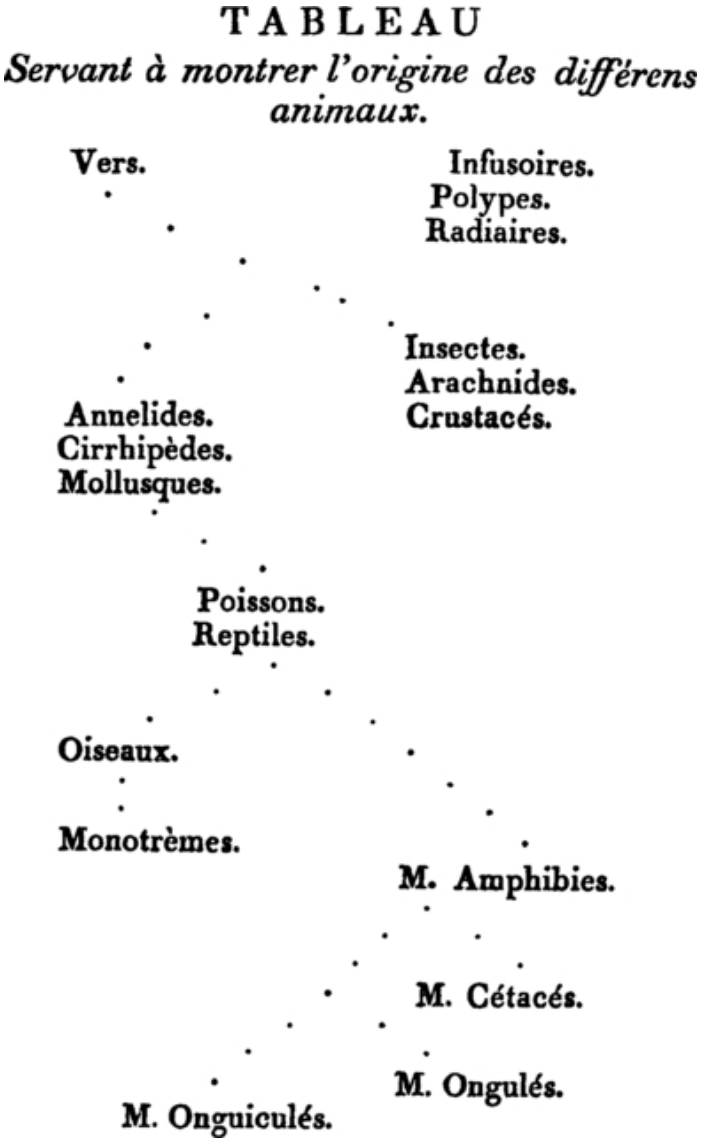

Figure 2: Jean-Baptiste Lamarck, *Table of the Origin of Animals* (1809)

Whilst Augier and Lamarck's designs certainly predate that of Darwin, Darwin was the first to consider 'genealogy proper' as the organising principle of life, and to apply the phrase 'Tree of Life' to a taxonomic tree.[60]

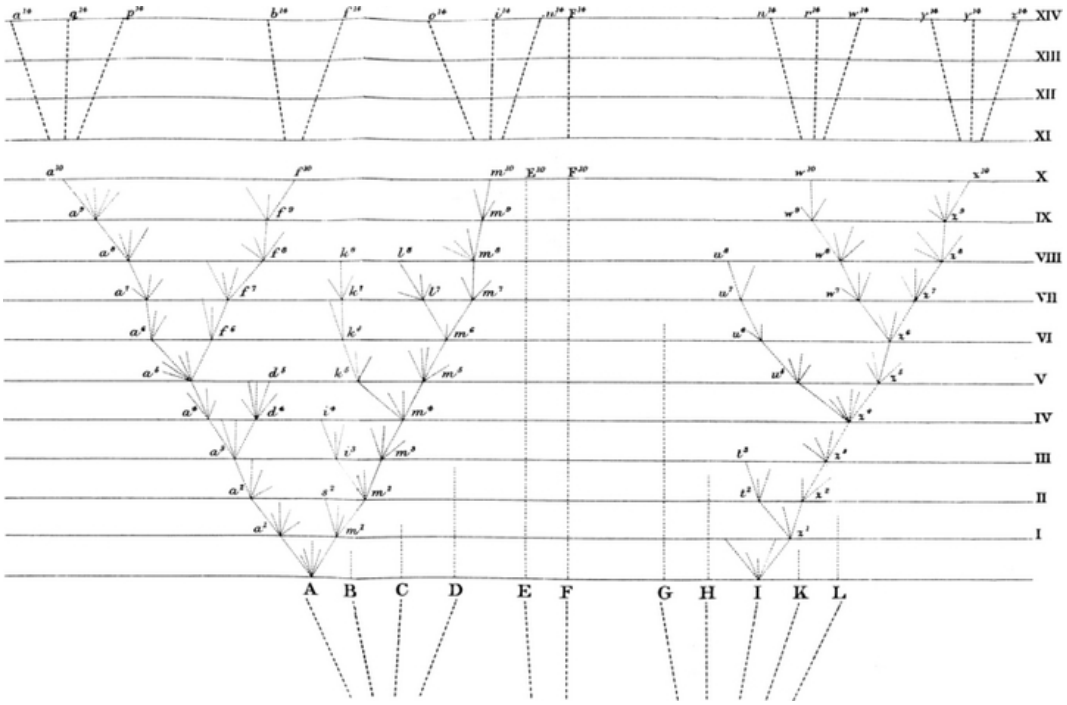

Figure 3: Charles Darwin, *Tree of Life* (1859)

History of Humanity

Darwin agreed with the research of noted geologist Charles Lyell, who posited in his *Principles of Geology* (1830-33), that Earth was older than 6,000 years, challenging the thinking of biblical scholars.[61] Darwin estimated in *The Origin* that Earth has existed for a 'far longer period than 300 million years', an estimate that underpins the idea that human evolution occurs over time.[62] In *The Descent*, he overtly discusses this, arguing that humanity has 'descended from some pre-existing form', most likely sharing a common ancestor with the higher apes.[63] It is postulations such as this which led to the great hippocampus debate of the nineteenth century. Richard Owen stated that apes and monkeys do not possess a 'hippocampus minor' structure in their brains, whilst humans do, and thus, humans are not related to apes.[64] Huxley, however, disproved this theory.

Through the careful dissection of monkeys, he found that they did possess hippocampus minor structures.[65]

Comparing Species

Darwin pointed out affinities between animals and humanity: they have some of the same diseases (such as syphilis); they have similar tissues; medicines can yield similar effects; they often have similar internal parasites; their wounds heal similarly; courtship can be similar, and the embryos of humans and apes are more similar than their adult forms. Vestigial organs, 'left overs' which no longer serve a purpose, also suggest affinity between species. One apt example concerns the muscles and convolutions of the ear, and the way in which 'the whole external shell' of the human ear 'may be considered a rudiment [or vestigial characteristic]', leftover from our ape-like ancestors. Like many extant animals, these ancestral animals benefited from 'erecting and directing the shell of the ears to the various points of the compass' in order to 'thus perceive the direction of danger'.[66] Darwin also attempted to show that the differences in mental capacities between humans and apes are not as great as first thought.[67] In *The Origin*, he cites humanity's 'natural prejudice, and … arrogance' as reasons behind the widespread Victorian denial of species connectivity.[68]

Struggle for Existence

Darwin derived the phrase 'struggle for existence' from Thomas Malthus. Malthus intended the struggle for existence to represent species 'pressed into mutual conflict by population pressures'. However Darwin appropriated it as 'a metaphor for a number of different relationships among organisms, and between the organism and physical conditions, that resulted in the survival and

reproductive success of some individuals, and the death and less frequent reproduction of others'.[69] In the years following the publication of Darwin's *Origin*, a fear of humanity's own struggle for existence permeated Victorian society, and was noticeable in the work of scientists such as Peter T. Austen, who said '[We] are at war with myriads of lower organisms which are trying to live on us, and which by so doing injure, cripple, or kill us'.[70] The theory of the struggle for existence was also a major catalyst for Social Darwinism, in that:

> From the earliest expressions of Social Darwinism in the 1860s until the turn of the century, numerous German scholars used the Darwinian theory to defend individualist economic competition and laissez faire, others emphasized a collectivist struggle for existence between societies, while most upheld both simultaneously.[71]

Reversion

The term 'atavism' mirrors Darwin's concept of reversion, and it is more widely used today. In 1862, Darwin wrote to Huxley, and said of atavism: 'Duchesne, who, I believe, invented the word, in his Strawberry book confined it, as every one [sic] has since done, to resemblance to grandfather or more remote ancestor, in contradistinction to resemblance to parents'.[72] The 'Strawberry book' to which Darwin refers is titled *Histoire Naturelle des Fraisiers* (*Natural History of Strawberries*), and was written by Antoine Nicolas Duchesne in 1766. Duchesne was a French botanist who was aware of mutations, variations, and species mutability before Darwin.[73] As Darwin noted, atavism refers to instances where ancestral traits reappear after being absent for one or more generations. This can bring about such abnormalities as 'extra digits', or polydactylism, and the reappearance of rudimentary structures such as tails.[74]

The concept of atavism fuelled fears of 'devolution', a now disproven theory of reverse evolution, by which over generations a species begins to revert to earlier stages in their evolution. This was produced from a misunderstanding of Darwin's reversion concept.[75] The reversion or devolution of humanity into ape-men was considered a real threat. This 'threat' was promoted by August Weismann, who posited that 'regression' to previous forms occurs whenever natural selection relaxes. In contrast, Darwin argued that 'degeneration' is an adaptive process, in which features rendered superfluous or impedimental by an environment will become vestigial. Darwin allowed that some retrogression might result from disuse, the explanation favoured by Lamarckians, although in general they did not greatly stress degeneration.[76]

Extinction

Debates about the extinction of species preoccupied nineteenth-century geologists and scientists. The research of French scientist Georges Cuvier was particularly influential. His analysis of elephant fossils found in Italy triggered a growing acceptance of the fact that species which had once existed had died out. [77] English geologist Charles Lyell captures this belief in extinction as fact, writing that

> the annihilation of a multitude of species has already been effected, and will continue to go on hereafter, in a still more rapid ratio, as the colonies of highly civilized nations spread themselves over unoccupied lands the annihilation of a multitude of species has already been effected, and will continue to go on hereafter, in a still more rapid ratio, as the colonies of highly civilized nations spread themselves over unoccupied lands. [78]

Lyell linked speciation with environmental conditions and also posited that extinct forms such as the iguanodon could reappear under identical geological conditions.

Based on a contemporary understanding of evolution, it is impossible for extinct forms to re-emerge. Darwin theorised that if an animal identical in appearance to an iguanodon were to appear through evolution and speciation, it would have a different genealogy to that of its extinct twin, and would necessarily be classified as a different species.[79] Lyell was, of course, correct in recognising that speciation is subject to environmental conditions.[80] The idea that extinction 'may be a fate more probable than progress' provoked anxiety and fear which 'intensified in the wake of Darwinian controversy'.[81]

This atmosphere of unease is evident in H.G. Wells' 1893 essay 'On Extinction':

> the life that has schemed and struggled and committed itself, the life that has played and lost, comes at last to the pitiless judgement of time, and is slowly and remorselessly annihilated. This is the saddest chapter of biological science — the tragedy of Extinction.[82]

Wells reflects late Victorian concerns about the precariousness of life, but also meditates on the 'excessive egotism of the human animal' that regards its extinction as 'incredible'.[83]

Shape of Thesis

I begin each chapter of this thesis with a brief discussion of the genre and authors being profiled, and then analyse the relevant fiction following the six Darwinian ideas outlined above. It has been crucial to foreground these six ideas as they are not only key to understanding Darwin's thought, but they are also the organising principle for each chapter in this thesis. As previously highlighted, my four chapters focus on a succession of genres, from the nineteenth-century modes of scientific romance and gothic fiction, to the more recent phenomenon of neo-

Victorian and Steampunk narratives. Throughout, Darwin's ideas are the key focal point, the connecting thread, and the primary mode of analysis.

Chapter One examines the impact of Darwin on Wells' scientific romances, a relationship which has been the subject of much scholarship.[84] I aim to assess how present Darwinian themes are in Wells' works, namely *The Time Machine, The Island of Dr Moreau,* and *War of the Worlds,* and whether it is Darwin's ideas, or Darwinism, which is afforded the most attention. It is crucial to remember throughout that Wells' application of such themes may have been unintentional (or 'unconscious') and thus authorial intent will not be stressed.

Chapter Two highlights the way in which Wells' enthusiasm for Darwinian ideas is shared by other nineteenth-century writers of scientific romance and gothic literature. The 'Book of the Machines' from Samuel Butler's *Erewhon*, Arthur Conan Doyle's *The Lost World* (1912), and Charles Kingsley's *Water Babies* (1862) fall into the first category, while Stoker's *Dracula* and Stevenson's *Dr. Jekyll and Mr Hyde* more properly fall into the gothic categorisation. All of these texts are infused with Darwinian sentiments. While none of the novels deal with Darwin and his ideas to the same extent as Wells, collectively they highlight just how wide the reach of Darwin's thinking was in their era. Whilst there is already much scholarship discussing the overt Darwinian elements in works by Butler, Doyle, Kingsley, and Stevenson, I aim to offer further insight into the Darwinian nature of these texts. It is *Dracula* to which I bring a fresh perspective, given that the Count is not usually regarded as a product of biological evolution and selection.

Chapter Three looks at the neo-Victorian texts *The French Lieutenant's Woman* by Fowles, *Morpho Eugenia* by Byatt, *The Darwin Conspiracy* by Darnton, *This Thing of Darkness* by Thompson, and *The Naturalist* by Conroy.

Until the mid-twentieth century Darwin was too recent a figure to be the subject of historical fiction, although his influence is evident in the developing genre of science fiction. From the late twentieth century to the present, the Victorian period has increasingly beguiled novelists. Given my explicit focus on novels with a Victorian setting, it is natural that several neo-Victorian texts form part of my discussion. Thompson, Darnton, and Conroy all include Charles Darwin as a character, whilst Fowles and Byatt portray Darwin's ideas through more subtle means. These neo-Victorian texts differ from their Victorian predecessors in terms of their perspective on Darwin and his ideas. While Victorian fiction focuses extensively on the anxieties provoked by Darwin's theories, neo-Victorian fiction reflects the widespread acceptance of his thinking over time.

Chapter Four studies the neo-Victorian phenomenon of Steampunk, focussing on Jeter's *Morlock Night*, Westerfeld's *Leviathan* trilogy, and Hodder's *Spring Heeled Jack*. All of the novels in this chapter critique the nineteenth-century perspective on women's rights. Darwin was of the opinion that men and women differed in their 'intellectual powers', with men 'attaining to a higher eminence, in whatever he takes up, than can woman'.[85] The fallacy of this argument is critiqued from a contemporary perspective in all of the Steampunk texts in this chapter, with female characters given agency and occupying positions of power, using it for both good and evil. Aside from the serious concerns reflected in Steampunk texts, this genre is typified by a sense of fun and irreverence when dealing with Darwin and his theories, an example of this being *Spring Heeled Jack's* portrayal of Darwin as a villain.

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[1] Dinah Birch, *The Oxford Companion to English Literature*, 2nd edn (Oxford: Oxford University Press, 2009), scientific romance <http://www.oxfordreference.com.ezproxy.waikato.ac.nz/view/10.1093/acref/9780192868719327?rskey=Itp9uc&result=2>[accessed 5 March 2015].

[2] Brian Stableford, *Scientific Romance in Britain 1890-1950* (London: Fourth Estate, 1995), p. 9.
[3] Brian Stableford, *Science Fact and Science Fiction: An Encyclopedia* (London: Routledge, 2015), p. 118.
[4] Stableford, pp. 468-69.
[5] Fred Botting, *Gothic*, 2nd edn (London: Routledge, 2014), pp. 1-2.
[6] Botting, p. 20.
[7] Ed Block, Jr., 'James Sully, Evolutionist Psychology, and Late Victorian Gothic Fiction', *Victorian Studies*, 25.4 (1982), 443-467 (p. 463)<http://www.jstor.org/stable/3826981> [accessed 29 April 2014].
[8] Louisa Hadley, *Neo-Victorian Fiction and Historical Narrative: The Victorians and Us* (Hampshire: Palgrave MacMillan, 2010), p. 3.
[9] Hadley, p. 14.
[10] Ann Heilmann and Mark Llewellyn, *Neo-Victorianism: The Victorians in the Twenty-First Century, 1999-2009* (London: Palgrave Macmillan, 2010), p. 10.
[11] Heilmann and Llewellyn, p. 24.
[12] Ibid.
[13] Jeff VanderMeer and S. J. Chambers, *The Steampunk Bible: An Illustrated Guide to the World of Imaginary Airships, Corsets and Goggles, Mad Scientists, and Strange Literature* (New York: Abrams, 2011), p. 63; Scott Westerfeld in VanderMeer and Chambers, p. 66; Rachel A. Bowser and Brian Croxall, 'Introduction: Industrial Evolution', *Neo-Victorian Studies* 3.1 (2010), 1-45 (p. 17).
[14] VanderMeer and Chambers, p. 69.
[15] Mark Hodder in *Steampunk: An Illustrated History of Fantastical Fiction, Fanciful Film and Other Victorian Visions*, by Brian J. Robb (London: Voyageur Press, 2012), pp. 10-11.
[16] Mark Llewellyn, 'What is Neo-Victorian Studies?', *Neo-Victorian Studies*, 1.1 (2008), 164-85 (p. 172).
[17] Marie-Luise Kohlke, 'Introduction: Speculations on the Neo-Victorian Encounter', *Neo-Victorian Studies*, 1.1 (2008), 1-18 (p. 14).
[24] Johann W. Tempelhoff, 'Darwin and Eliot in the plots of nineteenth-century science and fiction', HNet Online (2001) < http://www.h-net.org/reviews/showrev.php?id=5550> [accessed 1 March 2015]; Raphaëlle Costa de Beauregard, 'Darwin, Polanski and Thomas Hardy's *Tess of the D'Urbervilles*: Facts and metaphors', *Miranda*, 1 (2010), 1-26 (p. 1).
[19] John Holmes, 'Darwinism in Literature', University of Reading http://blogs.reading.ac.uk/special-collections/files/2014/02/Darwinism-in Literature.pdf [accessed 1 March 2015].
[20] Amanda Mordavsky Caleb 'Amoral Animality', in *Restoring the Mystery of the Rainbow: Literature's Refraction of Science*, ed. by Valeria Tinkler-Villani and C.C. Barfoot, vol.1 (New York: Rodopi, 2011), p. 320.
[21] Glenn O. Carey, 'Samuel Butler's Theory of Evolution: A Summary', *English Literature in Transition, 1820-1920*, 7.4 (1964), 230-3 (p. 230).
[22] Christopher Hamlin, 'From Being Green to Green Being', *Victorian Studies*, 54.2 (2012), 255-81 (pp. 255-6).
[23] Patricia Ferrer-Medina, 'Wild Humans: *The Culture/Nature Duality in Marie Darrieussecq's* Pig Tales *and Robert Louis Stevenson's* Dr. Jekyll and Mr Hyde', *The Comparatist*, 31 (2007), 67-87, (p. 67).
[24] Stefan Lampadius, 'Evolutionary Ideas in Arthur Conan Doyle's *The Lost World*', *Der andere Conan Doyle: Internationale* Tagung, 20.21 (2011), 68-97 (p. 69).
[25] Lampadius, p. 69.
[26] Charles S. Blinderman, 'Vampurella: Darwin and Count Dracula', *The Massachusetts Review*, 1.2 (1980), 411-28 (pp. 413, 414).
[27] John Glendening, *Evolutionary Imagination in Late Victorian Novels* (Aldershot: Ashgate, 2007), p. 116.
[28] Michael J. Smith, 'Neo-Victorianism: An Introduction', *Australasian Journal of Victorian Studies*, 18.3 (2013), 1-3 (p. 1).
[29] Heilmann and Llewellyn, p. 12.
[30] June Sturrock, 'Angels, Insects, and Analogy: A. S. Byatt's "Morpho Eugenia"', *Connotations*, 12.1 (2002/2003), 93-104.
[31] Qiming Ji, and Ming Li, 'Freedom in "The French Lieutenant's Woman"', *Theory and Practice in Language* Studies, 3.11 (2013), 2052-2060, p. 2056;
Naomi Rokotnitz, '"Passionate Reciprocity": Love, Existentialism, and Bodily Knowledge in The French Lieutenant's Woman', *Partial Answers: Journal of Literature and the History of Ideas*, 12:2 (2014), 331-354, pp. 332, 350.

[32] José Angel García Landa, 'Harry Thompson's This Thing of Darkness: Narrative Anchoring' (2009), 1-16 (p. 1) <http://www.academia.edu/336349/Harry_Thompson_This_Thing_of_Darkness_Narrative_Anchoring>[accessed 6 March 2015].
[33] Heidi Hansson, 'The Double Voice of Metaphor: A.S. Byatt's "Morpho Eugenia"', *Twentieth Century* Literature, 99.45.4, 453-466 (p. 453).
[34] Tim Powers, 'Introduction', in *Morlock Night* by K.W. Jeter, ed. by Tim Powers (2011), 7-11 (p. 7).
[35] K.W. Jeter, *Morlock Night* (Oxford: Angry Robot, 2011), back cover.
[36] James Blasingame, 'Behemoth by Scott Westerfeld', *Journal of Adolescent & Adult Literacy*, 54.8 (2011), 631-2 (p. 631).
[37] D. R. Oldroyd, *Darwinian Impacts: An Introduction to the Darwinian Revolution* (Milton Keynes: Open University Press, 1980), p. 64.
[38] Charles Darwin, *On the Origin of Species*, ed. by Jim Endersby (Cambridge: Cambridge University Press, 2009), p. 10.
[39] See: Charles Darwin, *The Voyage of the Beagle*, ed. by H. Graham Cannon (Dent: Everyman, 1959); Lampadius, p. 74.
[40] Darwin, *Origin*, pp. 71, 73.
[41] Patrick A. McCarthy, '*Heart of Darkness* and the Early Novels of H.G. Wells: Evolution, Anarchy, Entropy', *Journal of Modern Literature*, 13.1 (1986), 37-60 (p. 42).
[42] McCarthy, p. 42.
[43] U. Kutschera, 'A comparative analysis of the Darwin-Wallace papers and the development of the concept of natural selection', *Theory in Biosciences*, 122.4 (2003), 343-59 (p. 343).
[44] Kutschera, p. 343.
[45] Virginia Richter, p. 22.
[46] Virginia Richter p. 22
[47] Virginia Richter, *Literature After Darwin: Human Beasts in Western Fiction, 1859-1939* (Hampshire: Palgrave Macmillan, 2011), p. 22.
[48] Lampadius, p. 70.
[49] John Glendening, *Evolutionary Imagination in Late-Victorian Novels* (Farnham, Surrey: Ashgate, 2007), p. 50.
[50] Robert J. Richards, *The Tragic Sense of Life: Ernst Haeckel and the Struggle over Evolutionary Thought* (Chicago: University of Chicago Press, 2008), p. 7.
[51] Holmes, p. 4.
[52] Dirk L. Couprie, Gerard Naddaf, and Robert Hahn, *Anaximander in Context: New Studies in the Origins of Greek Philosophy* (New York: State University of New York Press, 2002), pp. 10, 12.
[53] M.R. Wright, *Empedocles: The Extant Fragments* (New Haven, CT: Yale University Press, 1981), pp. 27-8.
[54] Wright, p. 81.
[55] See: Aristotle, 'Historia animalium', trans. by D'Arcy Wentworth Thompson, in *Volume 4 of The Works of Aristotle Translated Into English*, ed. by Sir Arthur Wallace Pickard Cambridge (Broadbridge: Clarendon Press, 1910).
[56] Lucretius, *On the Nature of the Universe*, ed. by Betty Radice (London: Penguin Classics, 1951), pp. 196-7.
[57] *Linnaeus: The Man and His Work*, ed. by Tore Frängsmyr (Sagamore Beach, MA: Science History Publications 1983), p. 175.
[58] Desmond King-Hele, 'The 1997 Wilkins Lecture: Erasmus Darwin, the Lunaticks and Evolution', *Notes and Records of the Royal Society of London*, 52.1 (1998), 153-180 (p. 154).
[59] My translation.
[60] Nils Petter Hellström, 'Darwin and the Tree of Life: The Roots of the Evolutionary Tree', *Archives of Natural History* 39.2 (2012), 234-52 (pp. 239-41).
[61] M.J.S. Rudwick, in *Principles of Geology*, vol. 1, by Charles Lyell (Chicago: University of Chicago Press, 1990), i-vi (p. xvii).
[62] Darwin, *Origin*, p. 418.
[63] Charles Darwin, *The Descent of Man and Selection in Relation to Sex* (London: John Murray, 1906), p. 6.
[64] For more information on the great hippocampus debate see Stephen Jay Gould, 'A sea horse for all races', *Natural History*, 104. 11 (1995), 10-15.
[65] Oldroyd, p. 195.

[66] Darwin, *Descent*, p. 19.
[67] Oldroyd, p. 145.
[68] Darwin, *Descent*, p. 36.
[69] Daniel P. Todes, *Darwin Without Malthus: The Struggle for Existence in Russian Evolutionary Thought* (Oxford University Press, July 1989), pp. 4, 8.
[70] Peter T. Austen, 'Our Struggle for Existence', *The North American Review*, 149. 393 (1889), 248-250, p. 250.
[71] Richard Weikart, 'The Origins of Social Darwinism in Germany, 1859-1895', *Journal of the History of Ideas*, 54. 3 (1993), 469-488, p. 471.
[71] Charles Darwin, *More Letters of Charles Darwin*, ed. by Francis Darwin and A.C. Steward (eBook 2739, Project Gutenberg, 2013), letter 149 < http://www.gutenberg.org/files/2739/2739-h/2739-h.htm> [accessed 1 March 2015].
[73] My translation; George McMillan Darrow, *The Strawberry: History, Breeding, and Physiology* (Austin, TX: Holt Rinehart & Winston, 1966), pp. 49-69.
[74] Francis Darwin and A.C. Steward, letter 274.
[75] Lampadius, p. 82.
[76] Glendening, p. 58.
[77] Donald K. Grayson, 'Nineteenth-century Explanations of Pleistocene Extinctions: A Review and Analysis', in *Quaternary Extinctions: A Prehistoric Revolution*, ed. by Paul S. Martin and Richard G. Klein (Tucson: The University of Arizona Press, 1984), pp. 5-39.
[78] Charles Lyell, quoted by Grayson, p. 21.
[79] Oldroyd, p. 94.
[80] Oldroyd, p. 45.
[81] Gillian Beer, *Darwin's Plots: Evolutionary Narrative in Darwin, George Eliotand Nineteenth Century Fiction* (Cambridge: Cambridge University Press, 2000), p. 135.
[82] H.G. Wells, 'On Extinction', *Chambers Journal*, 30 September 1893, 623-24.
[83] H.G. Wells, 'On the Extinction of Man', in *H.G. Wells, Early Writings in Science and Science Fiction*, ed. by Robert M. Philmus and David Y. Hughes (Oakland: University of California Press, 1975), 148-151 (p. 149).
[84] John Holmes, 'Darwinism in Literature', University of Reading <http://blogs.reading.ac.uk/special-collections/files/2014/02/Darwinism-in Literature.pdf>[accessed 1 March 2015], p. 1.
[85] Darwin, *Descent*, p. 858.

Chapter One: Darwin and Wells

Evolution created a muddle in its implications for humanity.[1]

From the mid-nineteenth century, Darwin's theories dominated the scientific realm, gaining more traction than rival theories proposed by the likes of Lamarck. Indeed, by the twentieth century such was Darwin's reach that the period of 1908-1909 has been dubbed the 'Darwin Celebration'.[2] While Darwin's tomes unsettled and upset some Victorians, his ideas excited and inspired others. The implications that Darwin's theories had for 'the realms of religion, philosophy, anthropology, economics, and politics' were both broad and controversial. The initial reception of *Origin* was unfavourable, and the majority of publications between 1859 and 1863—from the 'gutter press', to scientific journals—took an anti-Darwinian stance. [3] In the years following *Origin* and *Descent*, however, Darwin's theories gradually gained support from most publications and greater acceptance by the wider public.[4] Evolutionary ideas provided engaging and thought-provoking reading material, regardless of readers' opinions on the subject.[5] Translating Darwinian ideas from the biological to the social realm paved the way for the widespread acceptance of Social Darwinism.[6]

Given the intellectual and moral ferment that Darwin's publications provoked, it is unsurprising that his ideas had a significant impact on creative writers of the era. It is widely acknowledged that he influenced Victorian realist novelists such as George Eliot and Thomas Hardy.[7] However, his imprint is also evident in nineteenth-century scientific romance and gothic fiction. The author at the heart of this chapter, H.G. Wells, and the authors featured in the next chapter, namely Arthur Conan Doyle, Robert Louis Stevenson, Charles Kingsley, Samuel Butler, and Bram Stoker, all engaged with Darwin's ideas.

Although Wells was familiar with Darwin's theories, he was selective in

his fictional discussions of these ideas, for example glossing over debates about 'the missing link'. Wells was educated in depth about Darwin's ideas, studying under T.H. Huxley. As a writer of scientific romance, the newly emerging genre that combined topical scientific theories with fantastical adventures and inventions, it is natural that Wells drew on his education to ground his speculative imaginings in current scientific thought. This chapter focuses on the presence of Darwin's ideas and Darwinism in Wells' three novels *The Time Machine*, *The Island of Dr. Moreau,* and *War of the Worlds*. These texts best embody the fear and anxieties surrounding the six key Darwinian ideas in my introduction. Wells' application of these six ideas will be discussed. The history of humanity will not be afforded its own section, however, as Wells does not overtly address this issue. The remainder of the ideas will be discussed in the order in which they appear in the introduction: evolution and selection; comparing species; struggle for existence; reversion; and extinction.

Evolution and Selection

'*We are on different platforms. You are a materialist*'.[8]

The concepts of evolution and selection are central to Wells' fiction. They form the foundation of *The Island of Dr. Moreau* in that Moreau is artificially selecting and, according to his progressive evolutionist views, evolving animals into humans. Moreau thus believes he is playing the role of a deity. In *War of the Worlds,* the 'more evolved' Martians are an example of how the Victorian public feared Darwin's idea of evolution. The conquest of the aliens by human bacteria represents the fact that Darwin's ideas are misunderstood, and thus they do not need to be feared. In *The Time Machine*, the Time Traveller expects to find many evolved species, and instead finds only 'devolved' humans. This is a commentary

on the negative consequences of Social Darwinism.

Adaptation is a main theme of all of the novels in that Moreau is artificially altering animals; the Martians succumb to unfamiliar bacteria; and the Morlocks have developed traits with which to survive in their dark environment. Recall that with adaptation comes the eventual loss of superfluous, or 'vestigial', features; structures which were once advantageous to an organism become either useless or detrimental, and thus diminish over time. *Moreau* deals with the idea of vestigial characteristics when Moreau remarks that 'pain gets needless'. In his view pain is a 'useless thing' that will be 'ground out of existence by evolution sooner or later'.[9] Prendick has ample knowledge of such evolutionary principles, having 'spent some years at the Royal College of Science' undertaking 'some researches in biology under Huxley'.[10] In this instance, Wells is paying tribute to his real-life teacher, whilst also adding credibility to the largely fantastical storyline.

Moreau, like Darwin, believes that science and religion are reconcilable, remarking, after his acknowledgement of evolution, that he 'is a religious man ... as every sane man must be'.[11] This statement comes as a response to Prendick's preoccupation with the idea of pain. Because of this, Moreau accuses Prendick of being 'a materialist'. He 'hotly' replies 'I am *not* a materialist'.[12] This conversation is important in that it shows how Darwin's materialistic idea of unguided species mutability was initially received. Prendick denies his shift away from the Christian idea of species immutability in such a way as to suggest that his reputation will suffer if he subscribes to such views, given that Darwin's ideas were unpopular in Britain. Moreau sees Prendick as ungodly, and an 'animal', because he focuses on the base, animalistic feeling of pain Moreau is causing, instead of recognising his island as a microcosm of Creation. Prendick's defensive

reaction may be due to an internal conflict caused by Darwin's theory of mutability. In Prendick's mind, evolution and religion are both valid and important, but he cannot yet find a way in which to reconcile them. Moreau thus mistakes Prendick's confusion for evidence of religious doubt or abandonment.

The protagonist in *The Time Machine* is only ever referred to as 'the Time Traveller'. He can also be viewed as a man who is inflicted with the religious doubt or abandonment experienced by those who misunderstand the theory of evolution. He acknowledges that with 'change in condition comes inevitably adaptations to the change'.[13] Additionally, he reasons that the Morlocks will 'become as well adapted to the conditions of underground life, and as happy in their way', as the Eloi are to theirs.[14] This quote refers to the lack of struggle in the Eloi community, a concept which will be explored later in the chapter. By reasoning that the Morlocks will change over time, the Time Traveller is conforming to Darwin's theory of adaptation, whilst acknowledging that all species are equally fit to survive in their discrete environments.

The narrator in *War of the Worlds* is of the same mind-set in that he pays homage to the role of natural selection, a process through which 'all terrestrial plants have acquired a resisting power against bacterial diseases'.[15] However, foreign bacteria could prove a threat, just as Martian flora is vulnerable to earthly bacteria. Fortunately, the Martians do not transmit any foreign bacteria, and it is assumed that there are 'no bacteria on Mars'. Consequently, the extra-terrestrial 'red weed' succumbs to earthly bacteria and rots 'like a thing already dead'.[16] There is nothing to suggest that the narrator is sceptical of Darwinian natural selection. Thus, in this case, the narrator is demonstrating that Wells accepts Darwin's theory. Whether this nod to Darwin was intentional or unintentional is speculative, and irrelevant. It is undeniably present either way.

Wells also delves into the complexities of the Darwin-Lamarck debate about selective breeding and inheritance. In *The Time Machine,* the Time Traveller explicitly states that humans alter species 'gradually by selective breeding'.[17] In this instance the Time Traveller refers to the alteration of species as a way to 'improve' different organisms, producing 'new and better' or 'more convenient' varieties. [18] Analogous to this is the Time Traveller's initial belief in progressive evolution, whereby the people of the future 'would be incredibly in front' of Victorian society in terms of 'knowledge, art, everything'.[19] What he finds instead are creatures at the 'intellectual level of ... five-year old children', and thus they are, in his view, devolved.[20] The concept of the Eloi being the product of evolution does not register in the Time Traveller's mind because their 'inferior' intelligence contradicts the idea of progressive evolution so beloved by the Victorians.

The Time Traveller's notion of improvement through selective breeding is echoed by Moreau. His vivisection experiments mimic the process of selective breeding, or artificial selection. He is 'devoted' to the 'study of the plasticity of human forms'.[21] In a sense, Moreau is taking the place of a deity, or Paley's watchmaker. I view the horrific results of Moreau's experiments as a critique on the folly of selective breeding. He is the demigod of his island, which is located in the vicinity of the Galapagos Islands, and thus it is likely to be subject to similar conditions.[22] The strangeness of Moreau's creations may therefore be reflections of the rapid evolutionary adjustment which Darwin observed in the species upon the Galapagos. While experimenting, Moreau discovers that the artificially altered creatures either cannot reproduce, or they produce offspring which mimic the parents' natural, unaltered form. Consequently, Moreau must alter each individual infant in order for them to resemble their parents' humanoid façade. This is a

direct challenge to Lamarckism, with Moreau commenting that 'there was no evidence of the inheritance of their acquired human characteristics'.[23] This echoes Wells' abandonment of Lamarckism in the wake of Weismann's pro-Darwinian claims.[24] Lamarckism is, however, still an underlying force within *Moreau.* There is a sense that the beast people possess an innate 'upward striving', reflecting the Lamarckian view of progressive evolution.[25]

Comparing Species

'*So vain is man, and so blinded by his vanity*'.[26]

Wells' texts are saturated in Darwin's theories of entanglement and assumed superiority. I believe that the presence of such ideas and the way in which they are promoted rather than scorned is a reflection of how Darwin's theories so profoundly influenced Wells' own belief system. Again, I wish to stress the fact that Wells' homage to Darwin's theories may have been implemented unintentionally.

Wells' apparent belief in entanglement is voiced through the Time Traveller in *The Time Machine*. He comments on the 'tangle of rhododendron bushes'.[27] The tangled bushes are symbolic of Darwin's entangled bank, or the elaborate interconnectedness of all species.[28] The word 'tangle' is used throughout *Moreau*, symbolising, above all, the chaos inherent in the idea of the entangled bank.[29] Wells arguably has a desire to separate himself from 'the ambiguities of evolutionary theory'. John Glendening terms this 'the Wellsian goal of disentanglement from limitations'.[30] Moreau fails to do this, ending up entangled with his 'mutilated victims', lying 'one over another. They seemed to be gripping one another in one last revengeful grapple.'[31] This outcome clearly shows the aforementioned chaos which is inherent in the idea of the entangled bank.[32]

The chaos of the entangled bank begins to be demonstrated in *War of the Worlds* when the first Martian cylinder lands in Surrey. Whilst Ogilvy first assumes that 'there's a man in it — men in it!' he then, 'with a quick mental leap', links the cylinder 'with the flash upon Mars'. He rightly assumes that whatever is contained within the capsule is not human, and shows compassion for the unknown species, remarking that 'the thought of the confined creature was so dreadful'. His desire to release said creature from suffering takes over his rational mind to the point where 'he forgot the heat, and went forward to the cylinder to help turn'.[33] By writing of interspecies empathy, Wells is reflecting the Darwinian idea that 'life was originally breathed into a few forms or into one', and is thus inextricably connected. This theory explains Ogilvy's desire to help a fellow creature. In this case the creature is extra-terrestrial, but if the post-Darwinian Big Bang theory (the idea that the entirety of Earth's universe originated from one single location) is applied, I argue that Ogilvy is acting under the influence of an innate, deep-seated duty to respect all forms of life. Ogilvy's actions echo the idea of equality, about which Darwin stated that 'from so simple a beginning', natural selection has produced, and continues to produce 'endless forms' of life, each of which are 'most beautiful and most wonderful'.[34]

This idea of equality forms the core of the entangled bank theory and continues throughout *War of the Worlds*, despite the fact that humanity is threatened by the Martians. At intermittent points in the novel, the panicked humans are likened to ants, frogs, bees, rabbits, rats, and cattle. The initial likening of humans to ants occurs when the Martians 'took no ... notice of the people running this way and that'. In this instance, the narrator compares the scattering of people to 'the confusion of ants in a nest' upon being disturbed by a human foot.[35] This comparison has two implications: it highlights the homology

of fear or danger responses between humans and ants; and the passage acts as a critique about the ease with which humans can disrupt smaller animals. If a human accidentally kicks an ant's nest, their action does not often elicit any sense of guilt or compassion. By applying the same blasé attitude to the Martians, Wells is demonstrating that humankind's way of thinking (or indeed not thinking) about other species is inconsistent with Darwin's perspective on equality.

The theme of animal-human comparisons is revived when the narrator is 'breast-high' in a river, surrounded by hordes of people 'scrambling out of the water through the reeds, like little frogs hurrying through grass from the advance of man'.[36] The next comparison arises when the narrator is trying to fathom the nature of the Martian's thoughts. It is unknown whether the Martians consider humankind to be prepared and thus 'organised, disciplined, working together', or whether they consider humanity analogous to a 'disturbed hive of bees', reacting to the threat in a seemingly chaotic fashion.[37] In this case, humankind is indeed reminiscent of disturbed bees, a fact which again highlights the homology of human-animal behaviour.

Comparisons between human-animal behaviours and characteristics are common in *Moreau*. Prendick compares himself to an 'ape-man', particularly noting the way in which his hands are 'hanging down', and his jaw is 'thrust forward'. These characteristics are at odds with those of Prendick, and indeed of humans at large.[38] By focussing intently upon the 'peculiarities' of his 'ape-like companion', Prendick 'scarcely notice[s] the path' they are following. [39] I view Prendick's lack of concentration as a critique on the folly of xenophobia (the fear of the foreign Other) and anthropocentrism. Prendick's preoccupation with differences leads him down an unknown and potentially dangerous 'narrow ravine'. He then emerges into a 'central gloom', the very home of the beast folk

who he fears, and feels distinct from.[40] It is here that he hears the beast folk focussing on the differences between themselves and men, which they are attempting to remove. In a chanting fashion, the beast folk proclaim that they are 'not to go on all fours', 'not to suck up Drink', 'not to eat Fish or Flesh', 'not to claw the Bark of Trees', and 'not to chase other Men'.[41] In this case, differences are not being stressed due to anthropocentrism or xenophobia, but due to the fact that Moreau has shaped the behaviour of the beast folk by barking threats, inflicting pain, and asserting superiority as their creator and guardian.

Prendick is indeed caught up in the 'horrible fancy' that Moreau 'had infected their dwarfed brains with a kind of deification of himself'.[42] The mantra of the beast folk reflects this through the lines '*His* is the house of Pain. *His* is the Hand that makes. *His* is the Hand that wounds. *His* is the Hand that heals', and '*His* are the stars in the sky'.[43] It is here that Wells refers to Darwin and his distaste for slavery when the beast folk repeatedly ask 'Are we not men?'.[44] This is similar to an historical Wedgwood plate which depicts an African American boy in chains on bended knee, under the words 'Am I not a Man and a Brother?'. Historically, Darwin married his cousin Emma Wedgwood, granddaughter of Wedgwood pottery founder Josiah Wedgwood.[45]

Prendick continues to compare the beast folk to men. In this case his anthropocentric viewpoint really shines through, with him calling the creatures 'the most horrible cripples and maniacs it is possible to conceive'. Rather than focussing on the similarities between him and the beast folk, Prendick perceives them as 'grotesque caricatures of humanity'.[46] Prendick's aforementioned preoccupation with difference is particularly significant here, because at this point in the novel he thinks that the beast folk are altered humans. His way of thinking thus can be seen as a critique of the presence of Social Darwinism in Victorian

times. The belief that humans who are dissimilar to himself are inferior, or a threat, echoes the attitude of real-world Victorian racists and bigots. Moreau also displays such an attitude when he remarks that his first gorilla-man resembled 'a fair specimen of the negroid type'.[47]

Prendick does not learn 'Hi non sunt hominess; sunt animalia qui nos habemus' (these animals have become men), until he faces the prospect of either drowning or surrendering to Moreau. The animals have been vivisected as part of a 'humanising process', rather than humans being mutilated beyond recognition.[48] Whilst Moreau's eventual 'physiological lecture' is 'very simple and convincing', it is in fact the underlying fantastical idea of the novel. This marriage of science and fantasy is precisely what places *Moreau* in the category of the scientific romance. After learning that the beast folk are animals fashioned into men, Prendick starts to focus on their human qualities. He comments that the animals are humanoid in that he 'never once saw an animal trying to think'. In addition, he cannot fathom the idea that the beast folk were not once men, as 'these animals *talk*'.[49] While hunting the leopard man, he realises 'the fact of its humanity', and thus the connection between it and himself. He witnesses it 'in perfectly animal attitude, with the light gleaming in its eyes and its imperfectly human face distorted with terror'.[50] I find Prendick's newfound affinity peculiar, in that I expect humans to be more accepting of humans dissimilar to themselves, than they are of animals with humanoid characteristics. Prendick turns this assumption on its head, reflecting once again Victorian Social Darwinism, and the folly, inexplicability, and limitations of such thinking.

On a related note, the narrator of *War of the Worlds* critiques the impact of racism, likening the destruction caused by the Martians to 'the ruthless and utter destruction our own species has wrought ... upon its inferior races.'[51] The use of

'inferior' here is not a reflection of the narrator's belief. Rather it is Wells' means of critiquing the way in which different "races" of mankind are perceived. In the eyes of Social Darwinists, unfamiliar "races" possess 'human likeness', but they do not conform to certain ideals. As a result, "races" such as 'the Tasmanians' 'were entirely swept out of existence' by their fellow men. The narrator ponders whether humans are 'such apostles of mercy as to complain if the Martians warred in the same spirit?'.[52] His question brings to light the way in which humanity assumes superiority over, and is thus hypocritical towards, all other species.

Similarly, Moreau is somewhat speciesist when selecting animals for his experiments. He finds sheep to be 'without courage', 'fear haunted', 'pain-driven', and 'without a spark of pugnacious energy to face torment'. Thus, sheep are 'no good for man-making'.[53] The animals which Moreau selects are more robust, agile, and cunning. The problem with choosing to humanise such animals lies partly in that the majority of them are carnivorous predators, such as the puma. Moreau's 'first man' was, however, moulded from an herbivorous animal, a gorilla. The gorilla was so chosen based on his man-like form. It was 'chiefly the brain that needed moulding; much had to be added, much changed'.[54] By humanising a gorilla with relative ease, Moreau is representing Wells' belief in the Darwinian idea that humans share a common ancestor with apes.

As previously discussed, the narrator in *War of the Worlds* can come across as anthropocentric. Whilst the novel is rich with descriptions of human-animal homology, and critiques on the folly of inequality, the narrator is used in order to represent the contrasting perspective. When the curate with whom the narrator is hiding becomes 'quite incapable of discussion' and subject to 'violent impulses', he is perceived as having 'sunk to the level of an animal'.[55] This brings light to the idea of a speech-centric approach to intelligence.

The narrator's anthropocentrism is diluted when he discovers that the Martians have turned a once familiar landscape into something 'weird and lurid' like that 'of another planet'. This is an uncanny experience for the narrator, and the shock ignites in him 'an emotion beyond the common range of men', triggering empathy for 'the poor brutes we dominate'. It is here that the narrator comes to accept the idea of homology, remarking that he feels 'as a rabbit might feel' if placed in a similar predicament.[56]

Until this point in the text, Wells has been using the narrator as a vessel for authorial thoughts and critiques. This scene signifies the moment where the narrator breaks through with his own consciousness and voice. He is taught a lesson in humility through his 'sense of dethronement' and accepts that he is 'no longer a master, but an animal among the animals'.[57] The narrator later laments his fall from one 'who had talked with God', to one who resembled 'a rat leaving its hiding-place', 'an inferior animal, a thing that for any passing whim of our masters might be hunted and killed'.[58]

The narrator continues to compare himself to animals, later returning to earlier imagery by agreeing with an artilleryman that men are just 'eatable ants'.[59] The final comparison between mankind and animals comes from the artilleryman himself. This section of the text acts as a critique on the way in which humans domesticate and exploit animals, in the sense that people 'make pets of some of them; train them to do tricks'. The artilleryman fears that this is precisely what the Martians will do to humans, farming them, and getting 'sentimental over the pet boy who grew up and had to be killed'.[60]

Comparisons between humans and animals clearly function to demonstrate homology or the entangled bank. This entanglement of humans and animals is contrasted in *The Time Machine* with the notion of assumed superiority. The Time

Traveller's aforementioned comments on entanglement are examples of authorial beliefs being filtered through a character, as the Time Traveller himself, when allowed a distinct voice, is more inclined to conform to the notion of assumed superiority. He shows this inclination upon his discovery of the future land, where he expects that 'the whole world will be intelligent, educated, and co-operating; things will move faster and faster towards the subjugation of Nature. In the end, wisely and carefully we shall readjust the balance of animal and vegetable life to suit our human needs'.[61] This anthropocentric view proves to be false, as the Time Traveller later discovers that all man-made structures are 'very badly broken and weather-worn', and that 'the whole earth had become a garden'.[62] It is not then the triumph of man which the Time Traveller is witnessing, but the 'sunset of mankind'.[63] At the end of *The Time Machine* the Time Traveller disappears, leaving the narrator to ponder the folly of mankind's assumed superiority. He 'thought ... of the Advancement of Mankind, and saw in the growing pile of civilization only a foolish heaping that must inevitably fall back upon and destroy its makers in the end'.[64] This demonstrates the Time Traveller's belief in extinction, and the fact that he does not rule out the extinction of humanity.

War of the Worlds demonstrates the way in which mankind may be perceived as foolish, falling from grace, and destructive. Just as the Time Traveller assumes superiority over the Morlocks and Eloi, the narrator in *War of the Worlds* remarks how the Martians assume superiority over humans or 'the creatures who inhabit this earth'. He says that humans must be, to the Martians, 'at least as alien and lowly as are the monkeys and lemurs to us'.[65] In this way, I can see that when any sentient species is faced with a smaller, less technologically advanced species, assumed superiority will rear its ugly head. The fact that that the narrator refers to 'monkeys and lemurs' as 'alien and lowly' shows that he has

misinterpreted Darwin's tree of life. His idea that the Martians 'have done a foolish thing ... a shell in the pit ... will kill them all' shows that he has anti-Darwinian, anthropocentric view when referring to terrestrial species.[66]

The Island of Dr. Moreau also entertains the idea of humanity's assumed superiority. Moreau's vivisection experiments aim to increase animals' intelligence, or rather that which mankind considers constituting intelligence. It is clear within the novel that speech is considered pivotal to intelligence: 'the great difference between man and monkey is in the larynx ... in the incapacity to frame delicately different sound-symbols by which thought could be sustained.'[67] Moreau thus assumes superiority due to mankind's unique ability to speak. The simian creature in *Moreau* has the ability to mimic sounds, but he cannot speak in the sense of communicating his own thoughts through words. Prendick says that he is 'little better than an idiot'.[68] However, I consider that his ability to comprehend and respond to questions signifies intelligence in the human sense. The use of language, including that of sign, is considered a human phenomenon.[69]

I found that *War of the Worlds* deconstructs the idea of a speech-centric approach to superiority. The Martians are able to initially overpower mankind's weaponry using 'sirenlike howls', rather than speech as we define it.[70] The ability to outsmart mankind undermines the idea of man's assumed superiority. Wells reinforces the fallacy of this notion in chapter eight, 'Dead London', wherein pre-existing earthly bacteria come to the rescue of mankind. The Martians are 'slain by the ... bacteria against which their systems were unprepared ... after all man's devices had failed'.[71]

Even though assumed superiority is critiqued in such a way as to hail bacteria as the saviour of mankind, the mere idea of parallel evolution (or homologous adaptations within two distinct species) is considered to be 'vulgar'.

Accepting homology or entanglement implies species equality. It also implies humanity's dethronement. Ogilvy remarks 'how unlikely' it is 'that organic evolution had taken the same direction in the two adjacent planets'.[72] Ogilvy calls the chances of such parallelism 'a million to one', a phrase which is significant in that he does not completely rule out such a possibility.[73] I can see here that although Ogilvy is resistant to the idea of homology, he is nevertheless plagued by uncertainty. Wells is echoing the tentative reception of Darwin's ideas through the character of Ogilvy. The narrator comments on homology in a more detached way, positing that it is 'quite credible that the Martians may be descended from beings not unlike ourselves'.[74]

The anxieties at play in both cases relate to the possible similarities between men and Martians. The two species later prove to have very little in common, as shown by ample descriptions of such differences, which offset the initial anxiety. The Martians are said to possess 'feeble musculature', and they do 'not sleep, any more than the heart of man sleeps'. The narrator also comments that the Martians are 'absolutely without sex', meaning that they reproduce via asexual reproduction, or budding.[75] The anxiety surrounding interspecies homology is thus proven to be irrational and unfounded within the text. Whilst this view is directly opposed to Darwin's theories, I believe that it is an essential ingredient in a text which predominately challenges the Victorian worldview. Wells does not commit to either viewpoint in this text. Whilst he frequently posits Darwinian ideas, Wells also acknowledges the existence of counter-positions advocated by Darwin's opponents.

Struggle for Existence

'*To them, and not to us, perhaps, is the future ordained*'.[76]

With humanity's assumed superiority comes the perceived inferiority of the 'lower animals', and the sense of a hierarchy among all living things.[77] Recalling that Darwin inadvertently strengthened this notion with his use of the Malthusian phrase 'struggle for existence' (intending this to simply apply to competition between individuals, and the ability to cope with environmental conditions) I have identified the impact of such a term in all three of Wells' texts.[78]

In *The Time Machine*, 'man had not remained one species, but had differentiated into two distinct animals', the Eloi and the Morlocks.[79] They occupy two separate niches: those of above and below ground, respectively. This serves to minimise the competition for resources, such as 'food or residence'.[80] Both species' struggle for existence is thus minimised: 'there were no signs of struggle, neither social nor economical struggle'.[81] The Time Traveller later learns that the Eloi are 'mere fatted cattle', thus the lack of struggle is partially due to an agreement of sorts between the Morlocks and the Eloi, or the farmer and the farmed, respectively.[82]

The obvious allegory for the Morlock-Eloi split in *The Time Machine* is that of '"individualism", in the form of unrestrained capitalism'.[83] The Darwinian aim of 'survival of the fittest' is bypassed by the divergence of upper and lower classes into two distinct species, each one suitably adapted to their own environment. The two species in *The Time Machine* are depicted as less advanced overall than nineteenth-century humanity, thus the novel is a critique on the dangers of '[U]ncontrolled Social Darwinism'.[84] This overt reference to Social Darwinism acts, in Patrick A. McCarthy's words, as 'a warning against transferring evolutionary principles into the realm of politics and economics'.[85]

The Time Traveller is caught up in his own struggle for existence whilst visiting the year 'Eight Hundred and Two Thousand, Seven Hundred and One

A.D'.[86] It is the Morlocks with whom the Time Traveller struggles. Initially they take his time machine from him, which hits him 'like a lash across the face', and brings 'the possibility of losing [his] own age, of being left helpless in this strange new world'.[87] The psychological effect that the removal has upon the Time Traveller is so great that 'the bare thought ... was an actual physical sensation. I could feel it grip me at the throat and stop my breathing'.[88] The secrecy of the Morlocks in their acquisition of the time machine, coupled with the Time Traveller's ignorance of their species' existence, gives a great advantage to the Morlocks in terms of the struggle for existence.

Curiosity drives the Time Traveller into the underground lair of the Morlocks. It is here that we see an example of Darwinian survival of the fittest. Early during his descent, the Time Traveller is subjected to disadvantages which foreshadow his eminent struggle with the Morlocks. The entry to the tunnels is described as 'adapted to the needs' of the Morlocks, and I see this as a warning which goes unheeded by the Time Traveller. He proceeds in an 'agony of discomfort', ignoring a flight response in which he considers ascending the ladder and 'leaving the Underworld alone'.[89] The Time Traveller acknowledges that he is 'ill equipped' for his journey into the lair of the Morlocks, thus he presently finds himself in an unfamiliar environment in which the Morlocks are the fittest, or the best adapted for their environment. The Time Traveller's descent down the ladder mirrors the idea of *Scala Naturae* in that he is sliding downward into the den of creatures which he considers to be devolved or 'lower' than humanity. His narrow escape is a testament to his greater physical strength against creatures 'much smaller and lighter' than himself, not his 'superiority'. Had the Morlocks been accustomed to receiving intruders, I reason that they would have been able to claim the Time Traveller.[90] He was very nearly outcompeted, with the Morlocks

grabbing his feet upon his ascent and dislodging his boot; ‘a trophy’ for the Morlocks, according to the Time Traveller. [91]

The situation is turned on its head once the Time Traveller is fully aware of the motives of the Morlocks. A battle breaks out between the two in which the Time Traveller struggles to shake off the ‘human rats’.[92] Reminiscent of his previous encounter with the Morlocks, The Time Traveller flails blindly in the dark. In this case, however, he feels the ‘succulent giving of flesh and bone’ as he chances to strike a few Morlocks.[93] It is purely the Time Traveller’s ability to see in the firelight which renders him victorious, in that he can negotiate a clear path whilst the Morlocks are ‘blundering ... past’ him, ‘straight into the fire!’[94] These two encounters demonstrate Darwinian survival of the fittest, with the second scene showing that the organism better adapted to the environment survives.

The Time Traveller is a foreign threat, much like the Martians in *War of the Worlds*. In both texts, the pre-existing species in a niche are outcompeted due to their lack of suitable adaptations, and new and immediate dangers cannot be foreseen by natural selection. *The Time Machine* shows that whilst a species may be the fittest in one environment, it can be outcompeted in another. The Time Traveller displays an understanding of survival of the fittest, remarking that the ‘strong ... survive and the weaker go to the wall’. He credits ‘human intelligence and vigour’ to adaptations acquired as a result of ‘hardship and freedom’.[95] The struggle for existence and survival of the fittest are therefore inextricably linked in that the former gives way to the latter, both within the texts and in a real-world context.

Within *Moreau*, the struggle for existence is paramount. When Prendick becomes marooned in a lifeboat at the beginning of the text, he is not particularly determined to survive. In fact, he states that ‘if I had the strength I would drink

sea-water and madden myself to die quickly'.[96] He then faces the prospect of being thrown overboard from his initial rescue vessel, but still does not show determination to survive. Although he initially 'bawled entreaties at the sailors', he 'had not the stamina', and soon simply 'waited passively upon fate'.[97] It is not until Prendick is chased by the 'Thing in the forest' that he starts to show some resolve to live: 'I wheeled round upon it ... struck with all my strength ... The skull rang loud, and the animal-man blundered into me ... to fall headlong upon the sand with its face in the water; and there it lay still'.[98] Prendick's triumph over the 'Thing' foreshadows the fact that he becomes the only man left alive on the island. In a situation where he is 'single-handed' with 'the tide ... creeping in', there is 'nothing for it but courage'. Prendick is demonstrating that survival is a primal instinct. The desire to survive presents itself at moments of extreme peril.

As noted, the artilleryman in *War of the Worlds* is faced with the realisation that, if the Martians are not conquered, 'cities, nations, civilisation, progress — it's all over'.[99] Rather than surrendering to this idea, the artilleryman declares that 'men like me are going on living — for the sake of the breed. I tell you, I'm grim set on living.' He is confident that 'we aren't going to be exterminated. And I don't mean to be caught, either'.[100] Recall that the artilleryman believes that humanity can survive if 'able-bodied' people form colonies underground. 'The useless and cumbersome and mischievous have to die. They ought to die'.[101] As an overt nod to Darwin, the narrator in *War of the Worlds* muses that mankind 'already admits that life is an incessant struggle for existence, and it would seem that this too is the belief of the minds upon Mars'.[102] Wells is thus utilising the idea of the struggle for existence, whilst showing that the artilleryman understands the notion of the survival of the fittest.

The struggle for existence can be intensified by the suppression of

instincts. Instincts do not appear to feature strongly in *The Time Machine*, however it is worth noting that Darwin's theory of a slave-making instinct can be applied to the Morlocks. Whilst Darwin identified this instinct in ants, I argue that the apparent homology of behaviour between ants and humans in *War of the Worlds* strengthens the notion that instincts can be homologous between distinct species. Indeed, the Time Traveller refers to the Morlocks as 'ant-like' creatures who 'preserved and preyed upon' the Eloi.[103] In this way, the treatment of the Eloi at the hands of the Morlocks, already discussed by countless scholars as a transparent critique of Victorian class difference, is also a reflection of the slave making instinct and its consequences in humans.[104] Wells is thus, intentionally or otherwise, promoting homology. This theory strengthens the notion of homology between the Martians and humans in *War of the Worlds*, but overall this text lacks significant representations of instinct. The fact that some humans run from the Martians whilst others stand and fight them, does however represent the idea of 'fight or flight', which are innate, universal instincts. Additionally, the narrator reveals his understanding of instinct when he is attempting to escape the Martians. He recalls that he 'heeded nothing of the heat, forgot that patent need of self-preservation'.[105]

The need for self-preservation can create a conflict between lawfulness and instinct. *Moreau* explores this conflict, and the resulting struggle for existence. Prendick learns that among the beast folk, 'old instinct was at war with Moreau's convenience'. The 'fixed ideas implanted by Moreau in their minds' consist of the aforementioned beliefs which are chanted by the beast folk. These 'battled in their minds with the deep-seated, ever-rebellious cravings of their animal natures'.[106]

Reversion

'*The stubborn beast-flesh grows day by day back again*'.[107]

Darwin's reversion concept and the resulting unfounded fear of devolution are core ideas in *The Time Machine* and *The Island of Dr. Moreau*. *War of the Worlds*, in contrast, has little to offer on the subject. The *Time Machine* overtly expresses the anxiety which accompanied the misunderstanding of Darwin's reversion to long lost characters. As noted, this gave rise to what is now regarded as the false idea of devolution, or the regression of mankind into 'lower' life forms. *The Time Machine's* winged sphinx, an amalgamation of man and beast, is symbolic of humanity's 'animal nature', the presence of which was denied by many. [108] The deterioration of the statue represents the consequences of denying said nature, in favour of a cultural façade. The idea of suppressing an inner 'immoral ape' is depicted in many other Victorian novels, including those of Doyle, Stevenson, and Stoker.[109] Wells also brings this idea to light in *Moreau* because Prendick is pursued by his own animal nature, much as Challenger's party are pursued by theirs in Doyle's *Lost World*. The beast man becomes, to Prendick, 'my Leopard-man'.[110] He is thus Prendick's Double, representing the 'primitive elements' of Prendick's nature. The Double is an example of Masahiro Mori's concept of the 'uncanny valley'. Mori's graph demonstrates the sense of uncanny felt by individuals who are confronted by humanlike doubles. A double who is mobile and humanlike in appearance elicits an uncanny feeling, whilst doubles who additionally blur the line between life and death elicit the strongest feeling of the uncanny.[111] Prendick's Double could signal his atavism in that he is forced into an animalistic role due to his surrounding environment.[112]

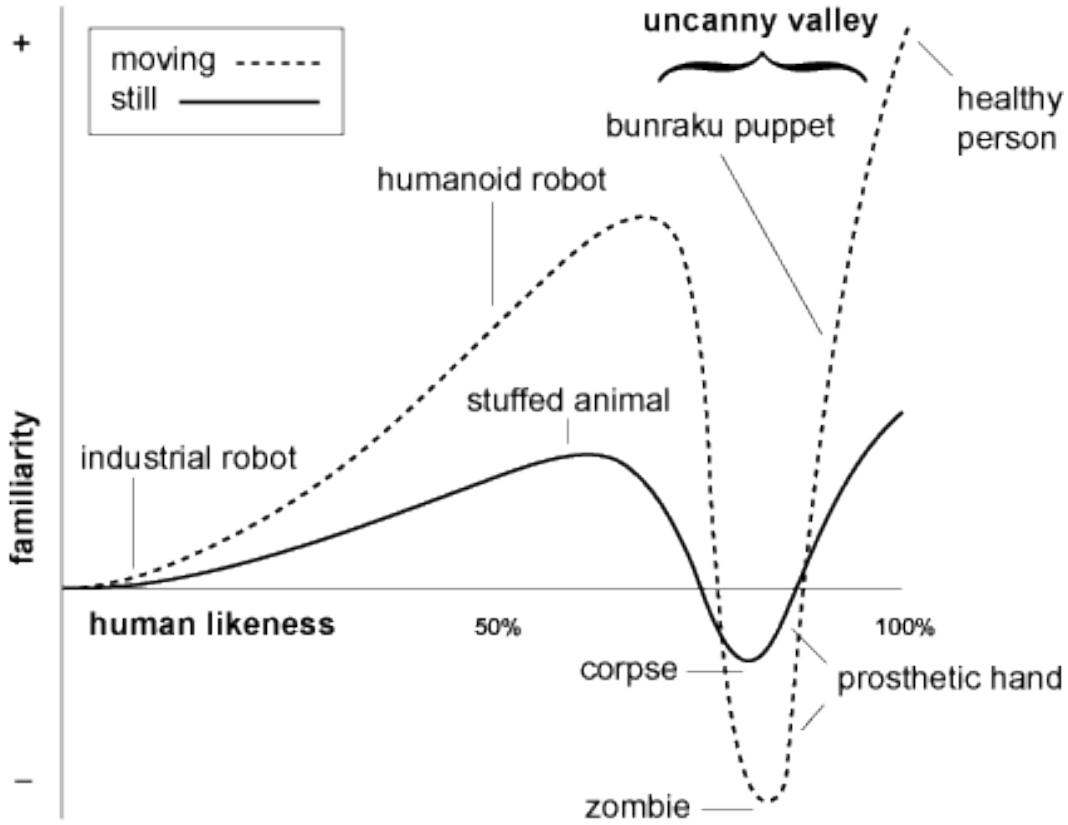

Figure 4: Masahiro Mori, *Uncanny Valley* (1978)

The Time Traveller is caught up in a panic directly relating to the idea of devolution, wondering 'what if ... the race had developed into something inhuman? I might see some old-world savage animal'.[113] What he does find are two species which have adapted and evolved from their common ancestor, the Victorian human (recalling that evolution does *not* differentiate between becoming less or more complex) in response to selection pressures and competition. The Time Traveller's idea of finding an ancestral form of human is thus the product of ignorance, and reflects the misunderstanding of Darwin's ideas in real-world Victorian Britain. To his credit the Time Traveller does later demonstrate an understanding of adaptation, remarking that the Morlocks have developed characteristics consistent with 'a long-continued underground habit'.[114]

He also shows knowledge of homologous structures, mentioning that the 'white fish of the Kentucky caves', and the 'owl and the cat', all share commonalities with the Morlocks.[115] Additionally, the Time Traveller mentions 'evolution' in relation to the Eloi and Morlocks once within the text.[116]

This signifies that, with time, the Time Traveller becomes more aware of the reality of his situation. His enlightenment is synonymous to the gradual dawning of understanding in society after the introduction of Dollo's Law (in 1893) two years before the release of *The Time Machine*. The Time Traveller may have renewed scepticism towards the idea of devolution, but he still considers the Eloi and Morlocks as products of 'human decay'.[117] In this instance the Time Traveller is using 'human decay' to evoke his view that the two species have made an unsavoury, yet not necessarily backwards, departure from his Victorian idea of the human.

Prendick's fear in *Moreau* functions like that of the Time Traveller in that it is fuelled by ignorance. In this case Prendick is ignorant of the nature of Moreau's experiments, and thinks that he will be forcibly devolved by Moreau. In Prendick's mind, the 'grotesque animalism of the islanders' is the result of forced devolution from ordinary men to primitive forms.[118] Once he hears Moreau's explanation that it is in fact a process of beast-to-man he is somewhat relieved. In this way Prendick's enlightenment mimics that of the Time Traveller and, by extension, that of the post-Dollo persuasion. It is only after this revelation that the text puts devolution aside, and begins to deal with reversion in a more Darwinian sense: the beast-folk are said to 'revert' and resume 'one animal trait, then another'.[119] This idea is more plausible in that Moreau forces the creatures to abandon their natural instincts, but nature ultimately triumphs over the artifice. An entire chapter is dedicated to this reversion, which conforms to Darwin's

explanation of instinct, and the struggle between opposed instincts, as discussed in the introduction. I discuss these ideas in the following section of this chapter. Prendick notices 'a growing difference in their speech and carriage', a tendency to walk erect 'with increasing difficulty', and the general clumsiness in which the beast-folk came to conduct themselves in activities like eating, drinking, and grasping. [120]

War of the Worlds has little to offer on devolution in comparison to Wells' other texts. The artilleryman muses over the possibility of the Martians farming humans (a situation reminiscent of the Eloi and Morlocks) and foresees that two species will result: tame and wild. In the artilleryman's view the wild humans will eventually 'degenerate into a sort of big, savage rat'.[121] It is here that we see another analogy to *The Time Machine*, in that the artilleryman plans to separate himself from the 'tame, stupid-rubbish' people of the surface, and establish a civilisation of 'able-bodied' people underground.[122] Ideas such as these rest on the assumption that evolution is progressive. Therefore any adaptations perceived as unsavoury or less civilised must be the product of devolution, an idea as much cultural, theological, and philosophical in origin as it is rooted in science.

Extinction

Any form represented by few individuals will, during fluctuations in the seasons or in the number of its enemies, run a good chance of utter extinction.[123]

The subject of extinction is paramount in *The Time Machine*, and touched upon in *War of the Worlds*, whilst *Moreau* does not deal with it in any real sense. *The Time Machine* explores the idea throughout the text as the Time Traveller finds the year 802,701 A.D devoid of 'horses, cattle, sheep', and 'dogs', suggesting that these species have become extinct.[124] He remarks that they 'had followed the Ichthyosaurus into extinction', and thus he displays knowledge of the geological record.[125] He makes this statement with conviction, suggesting that Wells is using

him to project authorial confidence in relation to the validity of the geological record. Ultimately, the Time Traveller witnesses 'the sunset', or extinction of humanity, as he finds the distant future to be devoid of 'all the sounds of man', and 'the stir that makes the background of our lives'.[126] All familiar animal life is also extinct at this point, but the Time Traveller astutely notes that 'the green slime on the rocks alone testified that life was not extinct'.[127] The only mobile organism to which the Time Traveller is witness is 'some black object flopping about .... It was a round thing, the size of a football perhaps, or, it may be, bigger, and tentacles trailed down from it'.[128] The unfamiliarity of such a creature, the harsh environment, and the shock of humanity's extinction, makes the Time Traveller 'sick and confused' to the point where he feels he 'was fainting'.[129] By portraying the extinction of life as humanity knows it, Wells is capitalising on the Darwin-induced anxieties of the Victorian public. Civilisation falls, and only animals remain. The world plunges into 'rayless obscurity. The sky was absolutely black'.[130]

Here, Wells envisions a horrifying apocalypse, the end of not only human existence, but that of Earth and light itself. What is unclear is if the final amorphous life form will survive the darkness and initiate a new cycle of evolution, or if even this 'devolved' life form will be obliterated into nothingness. The final image of the tentacled mass horrifies the Time Traveller, but in Darwinian terms it can perhaps be interpreted in a more hopeful light. If the 'devolved' tentacled mass contains the potential for progressive evolution, will humanity reappear as the pinnacle of life, and if so, which forms will give rise to it? Or, will evolution take a more Darwinian path, resulting in life forms that do not assume superiority, and may or may not approach the form of a human? Wells raises these questions, but leaves the answers open-ended, encouraging readers to

think more deeply about the scientific theories which underpin his fiction.

Such obscurity is not present in *War of the Worlds*, yet the threat of extinction hangs in the air for both humanity and the Martians. The narrator believes that 'to carry warfare sunward' is the Martians' 'only escape from the destruction that, generation after generation, creeps upon them.'[131] In this way, the Martians mirror terrestrial species in that they possess an innate desire to survive. As reflections of humanity, one cannot 'judge of them too harshly', as mankind 'must remember what ruthless and utter destruction our own species has wrought'. The struggle for existence, and arguably the greed of humanity, has led to the extinction of many animals such as the 'bison and the dodo'.[132] Wells is thus critiquing the way in which humanity wipes out species with such ease and complacency.

Steeped as he was in Darwinian theories through his study with Huxley, Wells had a thorough working knowledge of Darwin's ideas. This scientific knowledge certainly finds its way into Wells' fiction, with *The Time Machine*, *The Island of Dr Moreau*, and *War of the Worlds* all saturated in evolutionary explanations. These texts draw on both Darwinian ideas and Darwinism. However, I argue that Wells heavily promotes Darwinian themes, and critiques the resulting Darwinism, in particular Social Darwinism.

Wells is so preoccupied with the future that he does not overtly deal with humanity's origins. In *Time Machine* he explores theories of devolution, with all the attendant associations of regression to a more primitive life form, but never explicitly addresses the question of the missing link, which will be discussed fully in the next chapter. Here, as with his other literary discussions, Wells bears the imprint of both Darwin's ideas and Darwinism. His fiction highlights the impact of Darwin's thought on both himself and on the wider age in which he lived. A

detailed knowledge of Darwin's theories is essential for fully understanding Wells' nuanced approach and his at times overt and at times subtle social critique.

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[1] John Glendening, *Evolutionary Imagination in Late-Victorian Novels* (Farnham, Surrey: Ashgate, 2007), p. 48.
[2] Glenn O. Carey, 'Samuel Butler's Theory of Evolution: A Summary', *English Literature in Transition, 1820-1920*, 7.4 (1964), 230-33, p. 232.
[3] Glendening, p. 55.
[4] D.R. Oldroyd, *Darwinian Impacts: An Introduction to the Darwinian Revolution* (Milton Keynes: Open University Press, 1980), pp. 196-8.
[5] Glendening, p. 55.
[6] Stefan Lampadius, 'Evolutionary Ideas in Arthur Conan Doyle's *The Lost World*', *Der andere Conan Doyle: Internationale* Tagung, 20.21 (2011), 68-97 (p. 77).
[7] See: Gillian Beer, *Darwin's Plots: Evolutionary Narrative in Darwin, George Eliot and Nineteenth Century Fiction* (Cambridge: Cambridge University Press, 2000); M.A. Smith, 'George Eliot, Charles Darwin and Nineteenth Century Science', *Journal of the Royal Society of Medicine* 87. 1 (1994); George Levine 'Hardy and Darwin: An Enchanting Hardy?', in *A Companion to Thomas Hardy* ed. by Keith Wilson (Oxford: Wiley, 2012); Stefani F. Anic, *Darwinism in the Selected Works of Thomas Hardy* (Johannesburg: Rand Afrikaans University, 2003).
[8] H.G. Wells, *The Island of Doctor Moreau* (London, Penguin, 2012), p. 71.
[9] Wells, *Moreau*, 2012, p. 72.
[10] Wells, *Moreau*, 2012, p. 25.
[11] Wells, *Moreau*, 2012, p. 72.
[12] Wells, *Moreau*, 2012, p. 71.
[13] H.G. Wells, *Time Machine* (London: Penguin, 2012), p. 32.
[14] Wells, *Time Machine*, p. 51.
[15] H.G .Wells, *The War of the Worlds* (Camberwell, Victoria: Penguin, 2009), p. 145.
[16] Wells, *War of the Worlds* p. 210.
[17] Wells, *Time Machine*, p. 31.
[18] Ibid.
[19] Wells, *Time Machine*, p. 24.
[20] Ibid.
[21] Wells, *Moreau*, 2012, p. 69.
[22] Glendening, p. 40.
[23] Wells, *Moreau*, 2012, p. 81.
[24] Glendening, p. 49, 57.
[25] Glendening, p. 50; Wells, *Moreau*, 2012, p. 77.
[26] Wells, *War of the Worlds* p. 8.
[27] Wells, *Time Machine*, p. 35.
[28] Glendening, p. 71.
[29] Glendening, pp. 41-2; see, for example, pp. 4, 65, and 151 in *Moreau* (2012) for references to 'tangle'.
[30] Glendening, p. 52.
[31] Wells, *Moreau*, 2012, p. 109.
[32] Glendening, p. 68.
[33] Wells, *War of the Worlds* p 15.
[34] Charles Darwin, *On the Origin of Species*, ed. by Jim Endersby (Cambridge: Cambridge University Press, 2009), p. 376.
[35] Wells, *War of the Worlds* p. 63.
[36] Wells, *War of the Worlds* p. 65.
[37] Wells, *War of the Worlds* p. 86.
[38] Wells, *Moreau*, 2012, p. 53.
[39] Ibid.
[40] Wells, *Moreau*, 2012, p. 54.

[41] Wells, *Moreau*, 2012, pp. 57.
[42] Wells, *Moreau*, 2012, p. 59.
[43] Wells, *Moreau*, 2012, pp. 58-59.
[44] Wells, *Moreau*, 2012, pp. 57.
[45] For more information about the anti-slavery Wedgwood plate, see the British Museum website <http://www.britishmuseum.org/search_results.aspx?searchText=wedgwood&q=wedwood>[accessed 3 March 2015].
[46] Wells, *Moreau*, 2012, p. 58.
[47] Wells, *Moreau*, 2012, pp. 74.
[48] Wells, *Moreau*, 2012, p. 65. My translation.
[49] Wells, *Moreau*, 2012, pp. 67, 70.
[50] Wells, *Moreau*, 2012, p 94.
[51] Wells, *War of the Worlds* p. 9.
[52] Wells, *War of the Worlds* pp. 9-10.
[53] Wells, *Moreau*, 2012, p. 74.
[54] Ibid.
[55] Wells, *War of the Worlds*, p. 134.
[56] Wells, *War of the Worlds* p. 144.
[57] Ibid.
[58] Wells, *War of the Worlds* p. 149.
[59] Wells, *War of the Worlds* p. 153.
[60] Wells, *War of the Worlds* p. 156.
[61] Wells, *Time Machine*, p. 31.
[62] Wells, *Time Machine*, pp. 25, 30.
[63] Wells, *Time Machine*, p. 30.
[64] Wells, *Time Machine*, p. 99.
[65] Wells, *War of the Worlds* p. 8.
[66] Wells, *War of the Worlds* p. 34.
[67] Wells, *Moreau*, 2012, p. 71.
[68] Ibid.
[69] Steven Pinker, *The Language Instinct: The New Science of Language and Mind* (London: Penguin, 2000), p. 79.
[70] Wells, *War of the Worlds*, p. 84.
[71] Wells, *War of the Worlds*, p. 167.
[72] Wells, *War of the Worlds* p. 10.
[73] Ibid.
[74] Wells, *War of the Worlds* p. 127.
[75] Wells, *War of the Worlds* p. 126.
[76] Wells, *War of the Worlds*, p. 179.
[77] Charles Darwin, *The Descent of Man and Selection in Relation to Sex* (London: John Murray, 1906), p. 5.
[78] Jim Endersby, 'Editors Introduction', in Charles Darwin, *On the Origin of Species*, ed. by Jim Endersby (Cambridge: Cambridge University Press, 2009), ix-lxv (pp. xl-xliii).
[79] Wells, *Time Machine*, p. 48.
[80] Charles Darwin, *Origin*, p. 35.
[81] Wells, *Time Machine*, p. 31.
[82] Wells, *Time Machine*, p. 64.
[83] McCarthy, p. 43.
[84] McCarthy, pp. 43-44.
[85] McCarthy, p. 47.
[86] Wells, *Time Machine*, pp. 1, 28.
[87] Wells, *Time Machine*, p. 35.
[88] Ibid.
[89] Wells, *Time Machine*, p. 55.
[90] Ibid.
[91] Wells, *Time Machine*, p. 58.
[92] Wells, *Time Machine*, p. 78.
[93] Ibid.

[94] Wells, *Time Machine*, p. 79.
[95] Wells, *Time Machine*, p. 32.
[96] Wells, *Moreau*, 2012, p. 5.
[97] Wells, *Moreau*, 2012, pp. 19, 20.
[98] Wells, *Moreau*, 2012, p. 43.
[99] Wells, *War of the Worlds*, p. 154.
[100] Ibid.
[101] Wells, *War of the Worlds*, p. 157.
[102] Wells, *War of the Worlds*, p. 8.
[103] Wells, *Time Machine*, p. 64.
[104] For discussions of *The Time Machine* as a critique of Victorian class difference see: Richard Tuerk, 'Upper-Middle-Class Madness: H. G. Wells' Time Traveller Journeys to Wonderland' *Extrapolation* (2005), 46.4, 517-526; Anne-Julia Zwierlein, 'The Biology of Social Class: Habit Formation and Social Stratification in Nineteenth-Century British Bildungsromane and Scientific Discourse', *Partial Answers: Journal of Literature and the History of* Ideas, 10.2 (2012), 335-357.
[105] Wells, *War of the Worlds*, p. 64.
[106] Wells, *Moreau*, 2012, p. 80.
[107] Wells, *Moreau*, 2012, p. 75.
[108] Glendening, p. 70.
[109] Lampadius, p. 84.
[110] H.G. Wells, *The Island of Dr. Moreau* (New York: Duffield and Green, 1933), p. 132.
[111] Masahiro Mori, 'The Uncanny Valley', trans. by Karl F. Mac Dorman and Norri Kageki, *IEEE Robotics & Automaton Magazine*, 19.2 (2012), 98-100 (p. 98).
[112] Glendening, p. 64.
[113] Wells, *Time Machine*, p. 21.
[114] Wells, *Time Machine*, p. 49.
[115] Wells, *Time Machine*, p. 49.
[116] Wells, *Time Machine*, p. 59.
[117] Wells, *Time Machine*, p. 64.
[118] H.G. Wells, *The Island of Dr. Moreau* (London, Penguin, 2012), p. 49.
[119] Wells, *Moreau*, 2012, p. 77.
[120] Wells, *Moreau*, 2012, pp. 123-4.
[121] Wells, *War of the Worlds*, p. 157.
[122] Wells, *War of the Worlds*, pp. 157-8.
[123] Darwin, *Origin*, p. 92.
[124] Wells, *Time Machine*, p. 26.
[125] Ibid.
[126] Wells, *Time Machine*, pp. 30, 91.
[127] Wells, *Time Machine*, p. 90.
[128] Wells, *Time Machine*, p. 92.
[129] Ibid.
[130] Wells, *Time Machine*, p 91.
[131] Wells, *War of the Worlds*, p. 8.
[132] Ibid.

Chapter Two: Darwin, Scientific Romance and the Gothic

Man still bears in his bodily frame the indelible stamp of his lowly origin.[1]

Wells was not the only author of scientific romance to be influenced by Darwin. A similar Darwinian imprint is evident in the fiction of Samuel Butler, Charles Kingsley, and Arthur Conan Doyle. The Darwinian influence was also strong on two authors whose imaginations were fuelled by the gothic rather than the scientific: Robert Louis Stevenson and Bram Stoker. This chapter is shaped in the same way as the last, beginning with a brief overview of the novelists' personal awareness of Darwin's ideas and Darwinism, before examining each of the key concepts discussed in relation to Wells' fiction: evolution and selection; comparing species; the struggle for existence; reversion; and extinction. In addition to these by now familiar tropes, these authors also deal with the history of humanity (including the hypothesis of the missing link), a concept that Wells did not explore. Throughout this chapter, I will once again profile the distinction between Darwin's ideas and Darwinism.

The authors considered in this chapter had varying degrees of direct engagement with Darwin and his scientific legacy. The Darwinian influence is perhaps most visible in relation to Butler. The *Origin* shaped Butler's own opinions regarding evolution. His initial response to Darwin was one of the 'most profound admiration', although Glenn O. Carey states that Butler thought that Darwin did not give sufficient credit to his predecessors.[2] Lamarckism was the polar opposite of Butler's beliefs for some time.[3] Butler, however, came to ultimately contest the idea of Natural Selection, as he believed in progressive evolution.[4] Additionally, he argued that purpose evolves with life and is therefore ever-developing. One can thus read *Erewhon*'s 'Book of the Machines' with this neo-Lamarckian idea in mind.[5] While Butler clearly did not agree with all of

Darwin's theories, both Darwin and Butler disregarded the idea of 'final cause' or aim.[6]

Textual clues in Kingsley's *Water Babies* indicate that he too was well familiar with the major scientific thinkers and writers of his day. A water baby can be seen as 'contrary to nature', a view which Kingsley disputes by stating that nobody understands 'what Nature is, or what she can do ... not even Sir Roderick Murchison, or Professor Owen, or Professor Sedgwick, or Professor Huxley, or Mr. Darwin'.[7] Kingsley then asserts that 'perhaps even they may be wrong' in their theorising, pointing to the way in which science is about well tested, yet largely disputed, theories, with new discoveries being made every day.[8] As a canonical first 'Golden Age' fantasy for children, *Water Babies* has received a great deal of critical attention.[9] In the nineteenth century, children's literature was likely to be read by parents before it was deemed suitable for their children to read. In this way children's literature was able to educate both demographics about Darwin's views on nature, the child, and the role of science in literature.[10]

Doyle, like Wells, encountered Darwin primarily through Huxley, whom he greatly admired. This interest in speculation about science and evolution is evident in his fiction and is one of the reasons why, alongside Wells and Jules Verne, he is considered a leading fore-father of science fiction.[11] As well as these influences, his imagination was also shaped by the historical fiction of Sir Walter Scott, and the mysteries of Edgar Allan Poe.[12]

Stoker began studying science at Trinity College five years after the publication of *Origin*, and he retained an interest in science and technology throughout his life.[13] There are many critics who have identified Darwin's ideas and Darwinism in *Dracula*, but there is little to suggest that Stoker was directly influenced by or felt indebted to Darwin. Through his study at Trinity College,

Stoker was certainly educated about Darwin's ideas, and emerging ideas around Darwinism. His prolonged engagement with science provided him with a thorough understanding of Social Darwinism, a term coined in 1877.[14]

Stevenson did not study science at University, or show any inclination to do so later in life. I have not identified any overt connection between him and Darwin, and this is particularly important because *Jekyll and Hyde* is soaked in Darwinian ideas. The extent of Darwin's reach to Victorian authors with no scientific background is thus highlighted in the following analysis of Stevenson's novel.

Evolution and Selection

Man is descended from some less highly organised form.[15]

All of the nineteenth-century writers discussed in this chapter bestow on at least one of their characters a working knowledge of evolution and selection. *The Lost World,* and *Jekyll and Hyde* both contain medical doctors with ample scientific knowledge, as does *Dracula*, with the addition of an educated school mistress, whilst 'Book of Machines' and *Water Babies* employ a 'writer' or narrator with such knowledge. The inclusion of these characters in all of the Victorian texts shows how influential scientific principles were.

In Doyle's *Lost World*, Challenger displays a near-accurate knowledge of evolution by natural selection, and other key scientific principles. Challenger comments that an extinct species of 'anthropoid ape' eventually developed into ape-men, who 'are of an appearance and shape' which resembles that of 'any living race' of man.[16] I argue that Challenger's knowledge of evolution is 'near-accurate', as his idea implies the existence of a missing link, as discussed in the next section of this chapter.

Early in *Lost World* it is revealed that Challenger wrote a paper called 'The Underlying Fallacy of Weismannism'. He also caused a 'spirited protest' in Vienna upon voicing his pro-Darwin, anti-Weismann viewpoint.[17] Challenger's outspokenness mimics that of T.H. Huxley, and he considers himself a 'Prophet', on a par with 'Galileo' and Darwin in terms of intellect and scientific import.[18] Stefan Lampadius points out that these evolutionary debates foreshadow the persistence of such ideas throughout the novel, whilst also showcasing the wide-reaching impact of Darwin's theories.[19] *Lost World* is thus a product of what John R. Lavas terms the 'Golden Age of Discovery'.[20] The text plunges the reader and the characters into the wilderness of South America, the same continent to which noteworthy scientists Alfred Russell Wallace, Henry Walter Bates, and Darwin had previously travelled.[21] Challenger mirrors Doyle's knowledge of such expeditions, commenting that the purpose of his journey 'was to verify some conclusions of Wallace and of Bates'.[22] In addition, Challenger speculates on the possibility that upon the plateau, 'nature is preserved by some check which limits the numbers of these ferocious creatures'.[23] This conforms to the Darwinian idea of natural selection, whilst his later statement, that 'evolution has advanced under the peculiar conditions of this country up to the vertebrate stage, the old types surviving and living on in company with the newer ones', clearly shows his confidence in and acceptance of the idea of evolution.[24]

Butler anthropomorphises machines in order to suggest that their construction is evidence of humanity assisting its own evolution.[25] This is due to the belief that machines are 'extra-corporeal limbs', an idea that I am inclined to agree with, given the twenty-first century (and my own) reliance on smart phones. Butler's idea stems from Paley's recognition of telescopes being extensions of the human eye. Inventions such as this arguably ease humanity's struggle for

existence, therefore they are ‘means of man’s modification’, or part of humanity’s evolution. The implication of such an idea is that non-human animals can choose to participate in their own evolution.[26]

In addition, Butler uses the idea of evolution as an analogy to show that machinery is altering in the same way as organic life forms, and he is not attempting to satirise Darwin’s theories. In the Preface to his second edition of *Erewhon*, Butler makes it clear that despite his book being labelled as ‘an attempt to reduce Mr. Darwin's theory to an absurdity’, ‘few things would be more distasteful’ to him ‘than any attempt to laugh at Mr. Darwin’. [27]

One direct analogy made within ‘Book of Machines’ occurs when the ‘writer’ is said to have

> divided machines into their genera, sub-genera, species, varieties, subvarieties [sic] and so forth. He pointed out tendencies to reversion, and the presence of rudimentary structures ... serving to mark descent from an ancestor.[28]

It is clear that the ‘writer’ has been bestowed with evolutionary knowledge by Butler, just as Challenger has been by Doyle in *Lost World*. By making this analogy from organisms to machines, the ‘writer’ is mirroring Darwin’s own analogy of selective breeding and its varying, unforeseen results, to natural selection. This analogy is at the heart of ‘Book of Machines’. It demonstrates that mankind is equally unaware of the result of mechanical experiments, and thus there is potential for unwitting contributions to machine evolution.[29] An Erewhonian Prophet addresses this idea, musing that ‘assuming the theory of evolution’, whilst ‘denying the consciousness of vegetable and crystalline action’, one can argue that mankind has ‘descended from things which had no consciousness at all’. If this is indeed the case, it is somewhat plausible (in the

Prophet's view) that mankind may see the 'descent of conscious (and more than conscious) machines from those which now exist'.[30] This idea only works, however, if one does indeed 'deny the consciousness of vegetable and crystalline action'. Whilst I myself am inclined to do so automatically, Butler's 'Book of the Machines' suggests that humanity is oblivious to the sensations of vegetables such as the potato, and 'lower' animals such as the oyster. Recall that in *Moreau*, Moreau considered pain to be 'useless', and that to give in to pain was to be ungodly or materialistic. His assessment of the pain felt by his animal subjects was thus greatly biased by this belief. Moreau's attitude towards his subjects is representative of the idea that all living things must conform to humankind's current—and arguably limited—understanding of what constitutes pain or consciousness.[31] The 'writer' in 'Book of Machines' asserts that humanity is arrogant when it comes to assessing pain or consciousness in other living things. I believe that much of the ignorance is deliberately cultivated by individuals, as some people do not want to acknowledge the fact that their lifestyle may harm other potentially sentient beings.

Whilst Butler uses an analogy to represent Darwinian ideas, Kingsley plays with the idea of evolution in *Water Babies.* In this case it is the narrator who possesses evolutionary knowledge, but it is distorted in that he says that 'an elephant ... is first cousin to the little hairy coney of Scripture, second cousin to a pig, and (I suspect) thirteenth or fourteenth cousin to a rabbit'.[32] I say that he 'plays' with Darwin's idea in that these species relationships are far from accurate, yet they imply relatedness. Kingsley is thus not concerned with portraying Darwin's ideas accurately, but he is overtly addressing them whilst also acknowledging their reach.

Stoker's *Dracula* is also explicit in its portrayal of nineteenth-century

scientific ideas, but it creates ambiguity as to which ones are at play within the text. Whilst much critical attention has been paid to *Dracula's* supernatural elements, and the overarching monstrous and gothic discourses which they represent, it is also possible to do a Darwinian reading to offer fresh insight into the text. Through a Darwinian lens, *Dracula* is essentially a battle of progressive evolution versus degeneration in that the Count possesses the qualities of a progressively evolved human, yet he is equally the primitive Other. The ambiguity lies in the question of whether the Count is on an upward journey to civilised Englishman, or a regressive journey into atavism.

This brings the concept of cultural evolution to the forefront. The Count moves from the arguably primitive setting of Transylvania to the modern and civilised realm of England.[33] Transylvania is 'in the midst of the Carpathian mountains; one of the wildest and least known portions of Europe'.[34] The word 'wild' is used repeatedly in relation to Transylvania and its inhabitants, alongside the words 'dark' and 'gloom'.[35] Jonathan Harker, the man who was kept captive in the Count's castle in Transylvania, finds some of the people in Bisritz unremarkable and similar to 'the peasants at home' in England. In his opinion it is the Slovaks 'who were more barbarian than the rest'. He thinks that the Slovaks 'do not look prepossessing' on account of their 'long black hair and heavy black moustaches', and he believes that in England 'on the stage they would be set down at once as some old Oriental band of brigands'.[36] In contrast, Mina Harker remarks that 'the East Cliff and the old abbey' in London were bathed 'in a beautiful rosy glow' in the sunset.[37] The Count calls London 'mighty', England 'great', and he proclaims that 'to know her is to love her'.[38] This contrasting imagery of Transylvania and London is important in that it sets up Transylvania as the jarring or frightening Other. Jonathan's judgements about the Slovaks

mimic the way in which Victorian Social Darwinists at large saw 'Orientals' as Others.

It is Jonathan Harker who initially sights the Count in London, recognising the 'beaky nose and black moustache and pointed beard' of the Count.[39] Harker realises that 'it is the man himself'.[40] The Count has 'succeeded after all, then, in his design in getting to London'.[41] In this way Dracula appears to be undergoing progressive evolution, albeit cultural, as the text shifts Darwinian ideas from the biological to the cultural realm. That the Count, or the Other, is a threat to Victorian England, is a reflection on the Social Darwinist logic of the era.

Cultural evolution is often the only form of evolution linked to the Count, as there is much scholarship on him as an atavistic creature. I argue that the Count is also subject to biological evolution of a non-progressive nature, as advocated by Darwin. He is sufficiently adapted to his 'dark' environment in Transylvania. When Dracula is first introduced, he is portrayed by Jonathan as 'without a single speck of colour about him anywhere'.[42] Throughout the novel, Dracula is repeatedly described as 'pale'.[43] This is significant from an evolutionary viewpoint in that it mimics the adaptation shared by Wells' Morlocks, and the real-life naked mole rat. The Count shares with these species a nocturnal habit, and a consistently dark, underground environment. Jonathan chooses to investigate Dracula's daytime habits because he has 'not yet seen the Count in the daylight'.[44] He toys with the idea that Dracula 'sleeps when others wake, that he may be awake whilst they sleep', but he does not know for sure until one day he descends 'a circular stairway, which went steeply down'.[45] To find the Count, Jonathan must navigate a 'dark, tunnel-like passage', and enter a vault in which 'the dim light struggled'.[46] His notion of Dracula being nocturnal is confirmed when he discovers the Count lying in one of several 'great wooden boxes' in the

vault.[47]

At this point in the text, contemporary readers such as myself may have formed the conclusion that Dracula cannot be active in daylight. This assumption stems from the common trope of vampires bursting into flames and turning to dust when exposed to ultraviolet light, as seen in contemporary vampire narratives such as *True Blood*.[48] It is unlikely that Victorian readers would expect such a reaction to occur in *Dracula,* as this motif was first introduced in the 1922 silent film *Nosferatu*.[49] It becomes apparent that the Count can function during the day when Jonathan is surprised by the Count entering his room and uttering 'Good-morning'.[50] There are several instances in which the Count appears in daylight, such as his appearance in Whitby where Doctor Seward recognises Dracula's 'high aquiline nose, on which the light fell in a thin white line', and, later in the text, where Quincey Morris reports seeing Dracula 'last afternoon at about five o'clock'.[51] The Count's ability to function during the day does not diminish the evidence that he is a product of evolution. A diurnal organism such as a human is limited in what they can achieve in the absence of light, for example, just as the Count is limited as to what he can achieve in daylight because 'his power ceases, as does that of all evil things, at the coming of the day'.[52] In this way, the Count is bound by his evolutionary adaptations to a nocturnal lifestyle.

Dracula's nocturnality produces another adaptation which is consistent with that of Wells' Morlocks. This is the phenomenon of the Count's 'bright' eyes which 'gleam' and 'seemed red in the lamplight'.[53] The gleaming of Dracula's eyes corresponds to the biological phenomenon of 'eye-shine', which is commonly seen in nocturnal predatory animals, but never in humans. It is only possible in animals which possess a *tapetum lucidum*, retinal *tapedum*, choroidal *tapetum cellulosum*, or a choroidal *tapetum fibrosum*, all of which are simply

reflecting structures within the eye which allow night vision.[54] In this way, Dracula's eyes betray him, giving him away as a nocturnal predatory animal rather than a human. Even his animalism is questioned when Mina remarks that Dracula is a 'thing', 'not human—not even beast'.[55] This quote shows that the characters are privy to the Count's non-human nature. It also shows that they cannot accept him as an animal, because he blurs the line between the two states of being. This phenomenon runs counter to Darwin's entangled bank in that it negates that humans are animals or animalistic. At this point in the text, then, the focus is on the supernatural elements of the Count, rather than his supposedly atavistic nature.

The redness of Dracula's eyes can be subject to a Darwinian reading in that they suggest the presence of a *tapetum* structure, as eye-shine can appear as a variety of colours from green, to yellow, to red, depending on the animal. Predatory animals pose a threat to humans, just as Dracula does, and thus Dracula's eyes are always referred to as a sign of something threatening or 'evil'.[56] Jonathan describes the Count's eyes as 'the flames of hell-fire', while Mina later remarks that his 'red eyes glared with the horrible vindictive look which I knew too well'.[57] By looking at Dracula's eyes through a Darwinian lens, it is possible to offer an alternative reading to those concerned with the literary associations of red eyes and malice. This association did not originate with Stoker. Red eyes have been linked to evil for centuries. In Dante Alighieri's famous fourteenth century poem *The Divine Comedy* (or *Inferno*), for example, 'Charon the demon' is portrayed with 'eyes of glede'.[58] The colour red itself is used to portray a threat in the poem, with 'grave denizens … gleaming vermilion'.[59] Red has also been used to denote evil in the Bible, where there is a 'great red dragon', representing 'the Devil, and Satan'.[60] The description of Satan as an animal,

whether it be ‘serpent’, or dragon, aligns with my reading of Dracula’s red eyes as animalistic evil, and demonstrates the link between the Darwinian and biblical associations of red eyes and evil.[61]

In order to fulfil his role as a predatory animal, Dracula has ‘sharp-looking teeth’, with which he attacks his victims. He is predatory, as discussed, but he is also parasitic. As a hematophage, to feed he must ‘suck’ blood from his host species, in much the same way as fleas or mosquitos do.[62] His teeth must be adapted to effectively extract blood from the neck of humans, leaving entrance wounds resembling ‘two little red points like pin-pricks’.[63] The Count is thus a nocturnal, parasitic transmutant, and he is subject to evolution and adaptation.

Stevenson’s Mr Hyde is another character to whom much scholarship on devolution and atavism has been devoted. I argue that, like Dracula, Mr Hyde can certainly be read through an atavistic lens, but there is ample textual evidence to suggest that he can also be regarded as a product of evolution and selection. Mr Hyde is essentially a product of selective breeding, in much the same way as the creatures in Wells’ *Moreau*, and the machines in Butler’s *Erewhon*. Moreau’s creatures and the Erewhonian machines are physically crafted into being, and so too is Hyde, being deliberately brought to the surface by a ‘potion’.[64] Hyde fits Darwin’s idea that selective breeding cannot guarantee the desired result. By ‘reflecting on the differences in the breeds of our domesticated animals in different countries’ Darwin was able to demonstrate that all organisms are subject to genetic variability, whether they are artificially selected, or from a population in which there ‘has been but little artificial selection’.[65] Jekyll’s expectation of what or who will materialise when he drinks the potion is thus inherently inaccurate, because he cannot foresee the natural variation, or chance alterations, which will occur in his manifestation.

Jekyll is caught up in ‘a beloved day-dream’ about separating the ‘moral and the intellectual’ elements of his personality. He hopes that for his ‘unjust’ self, ‘life would be relieved of all that was unbearable’. For his ‘just’ self, he wishes to ‘walk steadfastly and securely … doing the good things in which he found his pleasure’.[66] Jekyll wants his unjust self ‘delivered from the … remorse of his more upright twin [his just self]’, and his just self to be ‘no longer exposed to disgrace and penitence by the hands of this extraneous evil’.[67] Jekyll realises that the idealistic vision of sectioning off ‘those provinces of good and ill which divide and compound man's dual nature’ is not without risk, but he does not consider the inevitable variability of his ‘evil’ Other self. What he considers is that he ‘risked death’ from an ‘overdose’ of a drug ‘that so potently controlled and shook the very fortress of identity’.[68] Jekyll is thus aware of the potential medical consequences to himself, but unaware of the variability, and thus potential danger and dominance, inherent in his Other. This variability does indeed produce an Other, Mr Hyde, who is unpredictable, dangerous, and ultimately uncontrollable.

Jekyll’s apparent ignorance of variation and random mutation can be seen as deliberate avoidance of such concepts, due to his ‘temptation of a discovery so singular and profound’ clouding any ‘suggestions of alarm’.[69] He uses deliberate avoidance in that Jekyll is a well-educated doctor, with the qualifications of ‘M.D [Medical Doctor]., D.C.L [Doctor of Civil Laws]., L.L.D [Doctor of Laws]., F.R.S [Fellow of the Royal Society of London for Improving Natural Knowledge]., etc.’[70] His M.D. ties him to Darwin, who, as discussed, was educated in medicine. More pertinent is Jekyll’s F.R.S—Darwin was also a Fellow. Like Butler’s ‘writer’, Doyle’s Challenger, Kingsley’s narrator, and Stoker’s Van Helsing and Seward, these connections to Darwin, and the level of scientific knowledge required in order to become a Fellow of the Royal Society,

suggest that Jekyll is likely to have a working knowledge of Darwinian concepts. The 'etc.' at the end of Jekyll's list of qualifications strengthens my argument, as it implies that Jekyll possesses even more qualifications than those which are indicated; a sign that he has some knowledge of the major interdisciplinary discoveries or theories of his era.

It follows that Dr Lanyon has such knowledge of Darwinian concepts, as Jekyll is his 'colleague', and once shared with him 'a bond of common interest'.[71] Jekyll's aforementioned 'fanciful' notion of splitting his consciousness into neat manifestations of good and evil is an example of what Lanyon terms 'unscientific balderdash', and is a result of Jekyll going 'wrong in mind'.[72] For Jekyll, the 'temptation' of testing his potion overrides his scientific rationality, and thus his 'scientific studies' become directed 'wholly toward the mystic and the transcendental' and are at complete odds with Darwinian materialism.[73]

History of Humanity

Humans evolved from animals ... there can be no absolute gap between them.[74]

Butler, Kingsley, and Doyle all overtly address the descent of mankind in their works, focussing not only on the wider implications of evolution, but also honing in on the history of humanity. Butler explores human evolution through the lens of the 'writer' who is, as discussed, concerned with consciousness. At the beginning of 'Book of Machines', the 'writer' posits that Earth was once 'simply a hot round ball with a crust gradually cooling', and thus it was 'utterly destitute both of animal and vegetable life'.[75] He poses the question of whether or not 'creatures possessed of anything like consciousness should be evolved' from such a desolate environment.[76] In this way, the 'writer' is continuing his analogy of human evolution to machine evolution. The comparison of life evolving from a 'seeming

cinder', to machines evolving from sources equally devoid of consciousness, shows that the 'writer' is again warning that machines may develop consciousness.[77] By making this warning, the 'writer' is showcasing the way in which Darwin's concept of evolution by natural selection led to fears and anxieties around the idea of the 'superior', 'special' human being descended from rudimentary sources.

Kingsley addresses these fears and anxieties through his characters' discussions of the great hippocampus question (a concept discussed in the thesis Introduction). This idea is parodied in *Water Babies*, in that there is much talk of 'hippocampus majors', and 'hippopotamus majors'.[78] One such mention occurs when the narrator is recalling that the professor had once

> declared that apes had hippopotamus majors in their brains just as men have. Which was a shocking thing to say; for, if it were so, what would become of the faith, hope, and charity of immortal millions?[79]

In this instance, Kingsley is addressing the disparity between science and faith, rather than focusing on the things they have in common. It is also here that Kingsley displays a strongly sarcastic tone when addressing the assumed authority of science over faith. He asserts that

> nothing is to be depended on but the great hippopotamus test ... if a hippopotamus major is ever discovered in one single ape's brain, nothing will save your ... greatest-grandmother from having been an ape too ... the one true, certain, final, and all-important difference between you and an ape is, that you have a hippopotamus major in your brain, and it has none.[80]

The point here is that science always has the last word; a view which Kingsley disputed, as noted earlier.

Kingsley goes on to point out that 'if a hippopotamus was discovered in an ape's brain, why it would not be one, you know, but something else'.[81] This quote addresses the widespread denial felt by people of faith, and other individuals who also felt that humans occupied a place of supremacy over the 'lower' animals. The parodying of the great hippocampus question in *Water Babies* shows that Kingsley was well aware of, and educated about, the debate surrounding the origins of humanity. The *Water Babies* operates as both an illustration of Darwin's theories, and a critique of science's undermining of faith through its emphasis on scientific evidence.

Kingsley rather playfully addresses the concept that a lack of evidence does not equal evidence to the contrary. This idea is important to Kingsley in that some people who question the validity of the Bible argue against the existence of a deity, based on the lack of tangible evidence for God's existence. Kingsley's narrator directly addresses questions or concerns which the reader may have regarding the existence of water babies, such as 'there are no such thing as water babies', explaining that 'if you had been there to see, and had seen none, that would not prove that there were none'.[82] He argues that

> no one has a right to say that no water-babies exist, till they have seen no water-babies existing; which is quite a different thing, mind, from not seeing water-babies; and a thing which nobody ever did, or perhaps ever will do.[83]

The water baby is analogous to a deity here, and this quote suggests that although God will likely never be seen, the absence of his appearance does not prove the absence of God himself.

The existence of God is not a concept debated in *Lost World*. The text is grounded in science, and suggests that science has authority—the very idea that

Kingsley questions in *Water Babies*. On the subject of the history of humanity, Doyle's character Mr Waldron delivers a 'birds-eye view of creation, as interpreted by science'. In his view, Earth was originally 'a huge mass of flaming gas', which became subject to 'solidification', 'cooling', 'wrinkling', and hydration.[84] This description is similar to that given by the 'writer' in the 'Book of Machines', as it is an idea rooted in real-world Victorian scientific theories, with which both authors were familiar.

Professor Challenger is presented as a man to whom science is of great import. He is shown to be a man who, despite his commitment to evolutionary science, is reluctant to accept the possibility of a human-ape common ancestor without proof. He believes that those who readily accept the idea of a 'missing link' are 'vulgar'. Nevertheless, he certainly does not discount the idea that such a link exists, exhibiting the characteristics of the scientist ideal: to be sceptical, evidence-driven, and willing to adapt to new theories.[85] Upon hearing of Malone's encounter with an 'ape-man', Challenger asks questions such as: 'did you happen to observe whether the creature could cross his thumb over his palm?'; 'had it a tail?'; and 'was the foot prehensile?'. This line of questioning is intended to identify whether the ape-man 'approaches more closely to the ape or the man', and it thus functions as a means of finding out whether a missing link exists upon the plateau.[86] It is Roxton who later regards the 'ape-men' pursuing him as 'ahead of any beast', and thus, in his mind at least, they are humanity's 'Missin' Links'.[87] In this way, *Lost World* treats Darwin's idea of humanity stemming from animal origins as a question only answerable by evidence. This is analogous to the viewpoint of the real-world scientific community at large. Stoker's text may seem to have a lot to do with science, but it is in fact religion which is at the forefront. The disparity between good and evil is a particular focus, with Dr Van Helsing, a

man of science, referring to God and the devil when he states that 'the devil may work against us for all he's worth, but God sends us men when we want them'.[88] Another character, Arthur Holmwood (Lucy's fiancé) asserts his dedication to religion when he is asked to help 'cut off' the Count's 'head and burn his heart or drive a stake through it, so that the world may rest from him'.[89] Holmwood responds that he will 'consent at once', as long as Van Helsing can promise that it will 'not violate' his 'honour as a gentleman' or his 'faith as a Christian'.[90] The characters' apparent dedication to Christian values is arguably why Darwin's theory of evolution is not given any attention. The history of humanity is simply not contested by these devout characters, who subscribe to Paley's theory of God as the divine 'watch-maker'. *Jekyll and Hyde* is similarly devoid of a concern for the history of humanity, but it does hint at what an atavistic form of human—namely Hyde—may resemble, as will be discussed in the 'reversion' section of this chapter.

Comparing Species

Anthropocentric thinking is at the root of many common misconceptions in biology.[91]

Homology between species is relatively easy to identify within all of the texts considered in this chapter. Each one of the texts has an overt focus on analogies and differences between humanity and at least one other species. 'Book of Machines' addresses the real-world, biblically-charged denial, and arguably ignorance, of species connectivity and equality, which has led to humanity's assumed superiority, or the notion that mankind will always triumph over any other species. The writer indeed expresses that 'machines stand to man simply in the relation of lower animals', as both 'lower' animals, and machines 'owe their very existence and progress to their power of ministering human wants, and must

therefore both now and ever be man's inferiors'.[92] He then presents the counter-argument that animals such as 'the ant and the bee ... retain superiority over man in the organisation of their social arrangements'; that birds are better at 'traversing the air'; fish are better at 'swimming'; horses have greater 'strength and fleetness'; and dogs are more inclined to perform acts of 'self-sacrifice' when compared to humans.[93]

The section following 'Book of the Machines' is worth mentioning in that it focusses on species connectivity. In this section, titled 'Rights of Animals', an Erewhonian Prophet delivers his opinions relating to the dietary norms of his fellow Erewhonians. He draws an analogy between humanity's shift from cannibalism, and his shift to veganism, by stating that 'if it was wrong of you to kill and eat your fellow-men, it is wrong also to kill and eat fish, flesh, and fowl'.[94] In the Prophet's view, cannibalism was once considered a social norm, just as omnivory is considered a social norm today. He hopes to convince others that omnivory, or specifically the eating of meat, is equal to or as morally wrong as cannibalism. The Prophet feels this way because he views all animals as 'our fellow-creatures' who have 'many and essential' things in common with humankind.[95] In this way, Darwin's entangled bank is advocated in this section.

Kingsley also acknowledges the existence of homology between species and indeed the homology between species and man-made objects, when the narrator lists the existence of

> water-flies, water-crickets, water-crabs, water-tortoises, water-scorpions, water-tigers and water-hogs, water-cats and water-dogs, sea-lions and sea-bears, sea-horses and sea-elephants, sea-mice and sea-urchins, sea-razors and sea-pens, sea-combs and sea-fans; and of plants, are there not water-grass, and water-crowfoot, water-milfoil, and so on, without end?[96]

The narrator disagrees with the idea that water babies cannot exist, based on the assumption that 'things cannot degrade, that is, change downwards into lower forms'. This idea is unreasonable because 'who is to say that water-babies were lower than land-babies?'.[97] He then goes on to argue for the mutability of all species, including humans, by reasoning that

> if the changes of the lower animals are so wonderful, and so difficult to discover, why should not there be changes in the higher animals far more wonderful, and far more difficult to discover? And may not man, the crown and flower of all things, undergo some change as much more wonderful than all the rest?[98]

Kingsley is here making light of humanity's assumed superiority. To me, this quote does not read as if he is earnest about the status of mankind.

Kingsley's narrator declares a large portion of the story to be 'a fairy tale, and all fun and pretence'. Nobody is 'to believe one word of it, even if it is true'.[99] Crucially, Kingsley was not using the text as an affront to Darwin. Instead, recalling that Kingsley was an 'early Darwinian', one can interpret the playful delivery as a parody on the assumed authority of scientific ideas.[100] As I have demonstrated, as a preacher, Kingsley was of the opinion that faith and science are equally valid, or 'reconcilable'. He thus writes of evolution as if it is a process orchestrated by God, an approach which appealed to Victorian parents as it retained the morals of religion.[101] Some values are of course common to the two viewpoints, such as the idea of species equality. God is said to love all of his creations equally, as noted by Coleridge in *Rime of the Ancient Mariner*:

> He prayeth well who loveth well
> Both men and bird and beast
> He prayeth best who loveth best

All things both great and small

For the dear God who loveth us

He made and loveth all.[102]

Despite this, the Bible still considers humans to be higher than all other species, as God tells Adam and Eve to 'replenish the earth, and subdue it: and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth'.[103] This shows that although all species are 'equal' in terms of how much love God bestows upon them, they are not expected to be treated as equals. Rather they are here as humanity's resources.

Darwin's related idea of species mutability is showcased in *Water Babies* when Tom is turned into a water baby. At this moment, Tom is clearly changed from one form to another in that he

> found himself swimming about in the stream, being about four inches ... long and having round the parotid region of his fauces a set of external gills … which he mistook for a lace frill ... they were part of himself, and best left alone.[104]

This transformation is commonly read through a biblical lens, as Tom is arguably undergoing a moral metamorphosis from his sinful self to a redeemed self. Despite this interpretation, Kingsley's continued argument for mutability also acts to advocate homology between species, as humans 'go through a transformation just as wonderful as that of a sea-egg, or a butterfly ... we are here but as the crawling caterpillar, and shall be hereafter as the perfect fly'.[105] Species are evidently compared throughout *Water Babies*, demonstrating Darwin's ideas of the entangled bank, and species mutability.

The Lost World depicts a world in which humanity is not the 'peak of nature', in that modern man has not yet established itself as the 'superior' species

upon the plateau.[106] In addition, Challenger advocates Darwin's entangled bank in that he considers 'the blood-tick, with its lancet-like proboscis and its distending stomach' to be 'as beautiful a work of Nature as the peacock or, for that matter, the aurora borealis'.[107] This can be viewed as a critique of the Victorian anthropocentric worldview.[108] Conversely, Malone is overtly anthropocentric. This is particularly pronounced when he is being followed by 'some strange creature'. He expresses indignation at the thought that a creature will 'turn upon modern man', and 'deliberately track and hunt down the predominant human'.[109] The ape-men are 'as big as a man and a deal stronger', and their human likeness suggests that they 'might have been kinsmen'. Despite this, Malone still considers them 'filthy beasts', and when they 'fingered' him 'all over', he feels that he 'should never be clean again'.[110] Further on, when the ape-men are killed by Challenger's party, Malone muses that 'at last man was to be supreme and the man-beast to find forever his allotted place'.[111] Challenger then contradicts his earlier attitude towards equality. He says that the event is one of the 'typical decisive battles of history', which shows that he considers the fight as synonymous to those between the "races" of mankind. [112] Social Darwinism comes to light again when the party discovers the Indian tribe. Challenger makes a statement hierarchising 'the type of these people':

> whether judged by cranial capacity, facial angle, or any other test, cannot be regarded as a low one; on the contrary, we must place it as considerably higher in the scale than many South American tribes which I can mention.[113]

This comment implies a hierarchy of "race", signalling a critique of Social Darwinism if Challenger is viewed as a representation of Victorian racists at large. Regardless of whether Challenger's comments seem to be for or against

equality, he is critiquing the folly of Social Darwinism in each case.

The seed of Social Darwinism is assumed superiority of humanity. This idea is demonstrated by Mr Waldron during his lecture on Creation. He describes the 'great ladder of animal life, beginning low down in molluscs and feeble sea creatures, then up rung by rung through reptiles and fishes', to 'the kangaroo rat'. Mr Waldron considers the kangaroo rat to be 'the direct ancestor of all mammals'.[114] Waldron is thus amalgamating Aristotle's *Scala Naturae* with Darwin's ideas of common ancestry.

Common ancestry is, of course, advocated when Challenger is satirically compared to an 'old ape-man'.[115] Incidentally, this reflects the way in which scientists such as Darwin and Huxley were repeatedly satirised by the media.[116] At this point in the novel, Challenger is stripped of the assumed superiority of humanity, whilst maintaining his status as 'chief' of the expedition. His similarities with the ape-man, namely his 'big shoulders', and 'great ruddy frill of beard' overtly suggest homology between mankind and apes.[117] Whilst these similarities with the ape-men are indeed satirical, in this case, where he is 'up a tree', 'hob-nobbin' with his twin brother' (the ape-man), I see another critique of Social Darwinism. That is, those of extreme likeness to one another will unite, whilst the foreign Other suffers.

Humanity's non-dominant place in the animal kingdom is reflected in the fact that the limited resources of Indians upon the plateau are at the mercy of the larger carnivorous 'dinosaurs', a term coined in 1842 by Richard Owen, 'meaning terrible great lizard'.[118] In contrast, however, by incorporating dinosaurs into the narrative, Doyle is conforming to the Victorian idea of progressive evolution. The plateau displays myriad species from different epochs (and to a progressive evolutionist, from different stages in evolution) culminating at humanity. In a

real-world context, the extinction of dinosaurs also gave traction to the idea of progressive evolution, or the progression 'from physical to mental power'.[119] By the same token, there was also anxiety surrounding the idea of dinosaurs. Their fossils implied an ancient Earth, much older than described in the Bible.[120]

Alongside Victorian anxieties, there were also fears, some of which related to the idea of the animal within the human. Doyle, Stoker, and Stevenson's novels harness these fears, and represent them through the lens of Mori's aforementioned 'uncanny valley'. Malone's first glimpse of an ape-man in *Lost World* is uncanny in that he is confronted with a 'human face—or at least it was far more human than any monkey's'.[121] Here, the familiar becomes unfamiliar, and signifies the homology between humanity and apes, a difficult concept for Victorian society to accept.

A similar sense of the uncanny arises in *Dracula* when Harker is being driven to the Count's castle by a 'driver'. Unbeknownst to Harker at this point this is actually the Count himself, who is assumed to be human. He is thus familiar, but also has unfamiliar traits, such as the ability to clear 'some impalpable obstacle' simply by waving 'his long arms', and is thus perceived as uncanny. The clash of the Count's human likeness with his unhuman characteristics creates several moments of the uncanny within *Dracula*. In some instances, the unfamiliar aspects of the Count are animalistic, and it seems that he occupies some unknown place in the animal-human continuum. The Count can 'crawl down the castle wall over that dreadful abyss *face down*'. This act of animalistic movement causes Harker to admit he is 'in fear — in awful fear — and there is no escape for me; I am encompassed about with terrors that I dare not think of'.[122] Dracula can 'go either as a man, or wolf, or bat, or in some other way'.[123] His movements are 'panther-like', and swift like 'something so unhuman'.[124]

Evidently, Dracula has the stature of a man, accompanied by unusual features which are usually reserved for animals. In this way, the familiarity of the human is made unfamiliar by animalistic qualities. These moments of the uncanny serve to demonstrate the fact that Victorian society must confront the unfamiliar to ultimately dissolve the uncanny feeling created by Othering those who do not conform to their idea of 'normality'. Acceptance of Darwin's idea that humanity is entangled with the animal kingdom is thus central to the unravelling of fears surrounding the idea of the animal within the human.

Jekyll and Hyde, like *Dracula*, draws on fears of the Other by creating a sense of the uncanny in order to eventually expel them. Mr Enfield describes Hyde as having 'something wrong with his appearance; something displeasing, something downright detestable ... he gives a strong feeling of deformity, although I couldn't specify the point. He's an extraordinary-looking man, and yet I really can name nothing out of the way'.[125] Enfield has trouble describing or classifying Hyde because the familiar, or the idea of humanity, has become unfamiliar. Later on, Lanyon also experiences the uncanny nature of Hyde, describing him as having 'something abnormal and misbegotten in the very essence' of himself. Hyde was 'seizing, surprising, and revolting' to the point where Lanyon cannot help but express 'curiosity as to his origin, his life, his fortune and status in the world'.[126] Jekyll reiterates that the concept of the Other is perplexing, when he states that 'I became ... a creature eaten up and emptied by fever, languidly weak both in body and mind, and solely occupied by one thought: the horror of my other self'.[127] Despite this, Jekyll displays compassion to this Other when he says 'I know how he fears my power to cut him off by suicide, I find it in my heart to pity him'.[128] This recognition of the empathy for his Other reflects the way in which Darwin valued species connectivity.

Homology is also showcased through the way in which Hyde is compared to other animals. He is portrayed as a fierce predator, whereby he breaks 'out of all bounds', clubbing an

> old gentleman … to the earth. And next moment, with ape-like fury, he was trampling his victim under foot and hailing down a storm of blows, under which the bones were audibly shattered and the body jumped upon the roadway.[129]

Hyde is also compared to a viper, in that upon being confronted he 'shrank back with a hissing intake of the breath'.[130] Hyde is described as 'pale and dwarfish', and he is originally a creature of the night.[131] In this way, Hyde's characteristics and habits mimic those of the Morlocks in the *Time Machine*. Ultimately, when Jekyll dies he takes Hyde with him, protesting with a 'dismal screech, as of mere animal terror'.[132] This final bout of 'animal terror' connects Jekyll and Hyde together as one entity, and thus sees the amalgamation of the animal within the human, or the re-entanglement of species.

Examining texts such as *The Lost World, Dracula*, and *Jekyll and Hyde* through a Darwinian lens sheds new light on characters who have traditionally been categorised as monstrous and Other. Through a Darwinian reading the repeated analogies and comparisons with other animal species work to negate or reduce the uncanny, and expose the root of this unease as within human delusions of superiority.

Struggle for Existence

'*When civilised nations come into contact with barbarians the struggle is short*'.[133]

The Darwinian struggle for existence is portrayed most overtly in the *Lost World*, with humans and various animal species competing for resources upon the

plateau. This concept is foreshadowed in the 'Book of Machines', which argues that as machines evolve, they will compete with one another for resources and power. Within *Water Babies*, the struggle for existence is usually studied through a biblical lens, outlining the internal struggle within Tom between good and evil, or lawfulness and instinct. *Jekyll and Hyde* also uses one character's dual nature (which is highly exaggerated in comparison to Tom) to again depict an internal struggle between lawfulness and instinct. Good and evil are portrayed as separate entities in *Dracula*, with the 'evil' Count competing against the 'moral' English characters.[134]

The 'Book of Machines' suggests that machines 'have betrayed' humanity 'into supplying that element of struggle and warfare without which no race can advance'.[135] In this way, the 'writer' is suggesting that machines are a tool with which humanity creates his own struggle between individuals. Machinery itself is said to be 'unable to struggle', and thus machines rely on 'man to do their struggling for them'.[136] Without machinery it is assumed by the 'writer' that humanity will be 'left behind in the race of competition, and this means that he will be made uncomfortable in a variety of ways, and perhaps die.'[137] This suggests that humanity is dependent on machinery, but there is in fact a mutualistic relationship between the two. If machines are ever to develop the ability to struggle between themselves, the 'writer' states that machines will 'still require man' in order to do so. This reciprocal reliance ensures that there will never be 'a clashing of desires between man and the machines as will lead to an encounter between them', and thus only 'among themselves the machines will war eternally'.[138] Butler is thus demonstrating Darwin's theory in action, and showing how the struggle for existence is an ongoing phenomenon.

The *Water Babies* also demonstrates the struggle for existence in full

force. When Tom is first introduced at the beginning of the narrative, he is described as possessing 'plenty of chimneys to sweep', and thus he has ample resources with which to make a living. The flipside of this is that most of the money which Tom earns is taken by 'his master to spend'.[139] Every day, Tom is 'hungry', and 'beaten', and he cries when he has to 'climb the dark flues' which rub 'his poor knees and elbows raw' and cause 'soot' to get 'into his eyes'.[140] In this way, Tom is parasitised or competed out of his resources to the point where he is only equipped for basic survival, and he must struggle daily in order to continue to be allowed even the most bare essentials. It is not until Tom is turned into an 'amphibious' 'water-baby' that his struggle for existence eases.[141] He becomes 'clean', and he is

> very happy in the water. He had been sadly overworked in the land-world; and so now, to make up for that, he had nothing but holidays in the water-world for a long, long time to come. He had nothing to do now but enjoy himself, and look at all the pretty things which are to be seen in the cool clear water-world, where the sun is never too hot, and the frost is never too cold.[142]

In this instance, Tom's struggle for existence has eased dramatically, and it is important to acknowledge the biblical allegory that Tom has 'drowned' and gone to heaven, or a place of no suffering.[143] This is the most common reading of the scene, as the text overtly deals with Christian ideologies. I argue that Tom's struggle for existence eases because he has undergone metamorphosis into an organism who is well adapted to his environment, and he has resources readily available.

Tom soon discovers that the other animals in the stream go through a daily struggle, just as he used to when he was on land. Tom witnesses 'a fearful splash

and struggle' in which 'the poor salmon was speared right through, and was lifted out of the water'.[144] This interspecific struggle is followed by an intraspecific tousle when 'from behind, there sprang on … three men three other men; and there were shouts, and blows … they were fighting; savage, desperate, up-and-down fighting'.[145] This results in the death of Grimes, who falls 'into the swift river' where he 'rolled over and over in the current'.[146] The death of Tom's oppressive master, and the fact that he 'did not turn into a water-baby, or anything like one at all' is, from a biblical standpoint, an analogy of the sinful being punished and condemned to Hell.[147] From a Darwinian perspective, Grimes' death is simply a case of the survival of the fittest. In this case Grimes has been outcompeted in the struggle for existence.

There are several more examples of the struggle for existence in the *Water Babies* such as when 'the dog fought and struggled, for he wanted to help the baby, and did not want to throw the poor dog overboard: but as they were struggling there came a tall green sea … and swept them all into the waves'.[148] The dog and the baby both die, becoming a 'water-dog', and a 'water-baby', respectively.[149]

Another example is where 'the petrels called to the mollys … gobbling and peeking and spluttering and fighting over the blubber'.[150] These examples of greed and fighting are easily, and often, explained in a biblical sense, but I argue that it is possible to think about them in terms of the survival of the fittest. It is important here to note that Darwin could not explain the human soul in materialistic terms. He did not, however, negate the existence of such phenomena, as he could not provide scientific evidence which disproved the existence of a soul. This ties into what the narrator states in Kingsley's text: that people 'fancy that such and such things cannot be, simply because they have not seen them', but

this does not prove their absence.[151] Darwin acknowledged 'the impossibility of determining at what precise period in the development of the individual … man becomes an immortal being … the period cannot possibly be determined in the gradually ascending organic scale'.[152] The events which occur post-mortem in the *Water Babies* can thus be viewed, through a Darwinian lens, as a representation of what the human soul may experience after the death of the material body.

Lost World refers to human souls a handful of times, and it should now be clear that, in doing so, Doyle is not strictly departing from a scientific train of thought. In a text which is soaked in so many evolutionary principles, the educated characters still subscribe to a metaphysical doctrine, with Malone remarking that 'our very souls were tingling with impatience', and Roxton telling him later to 'make up your soul'.[153] Despite the apparent belief that humans possess souls, and are thus in a sense 'immortal', the party are under no illusions as to their increased struggle for existence upon the plateau.[154] Before setting out on their exhibition, Challenger explains the plateau to Malone as being 'an area, as large perhaps as Sussex' which

> has been lifted up en bloc with all its living contents, and cut off by perpendicular precipices of a hardness which defies erosion from all the rest of the continent. What is the result? Why, the ordinary laws of Nature are suspended. The various checks which influence the struggle for existence in the world at large are all neutralized or altered. Creatures survive which would otherwise disappear.[155]

Malone is thus pre-warned that his struggle for existence will be amplified upon the plateau, because he will need to compete against animals which are well adapted to that environment. Despite this warning, Malone is only prepared for competition between existing species upon the plateau, partly due to his inherent

anthropocentrism as discussed earlier. He acknowledges that the animals upon the plateau 'should tear each other to pieces' as this 'was a part of the strange struggle for existence', and thus he shows that he is well aware of Darwin's principle.[156]

Malone and his party prove to be in grave danger from the 'Ape-men' because 'they were big fellows, as big as a man and a deal stronger'.[157] Challenger is said to have 'managed to struggle to his feet' during the altercation, but it is Summerlee who is captured by two of the ape-man King's guards, who 'caught him by the wrists and pulled him brutally to the front. His thin figure and long limbs struggled and fluttered like a chicken being dragged from a coop'.[158] Despite Challenger 'begging, pleading, imploring for his comrade's life', the fight culminates in the death of 'the king' who 'sank down, a tangled red sprawling thing, upon the ground'.[159] In this case, the humans outcompete the apes due to their advanced weaponry, as it is 'Lord John's rifle' which kills the king.[160] In unaided, hand-to-hand combat, it would certainly be the ape-men which would prove the fittest to survive, as they are 'of immense size' and strength. [161] Malone is indeed almost put to death by an ape-man who holds him, with his head seemingly 'twisted half-off' until he 'could struggle no longer'.[162] Malone recalls that

> as the creature felt me grow limp in his grasp, two white canines gleamed for a moment at each side of the vile mouth, and the grip tightened still more upon my chin, forcing it always upwards and back. A thin, oval-tinted mist formed before my eyes and little silvery bells tinkled in my ears.[163]

It is only 'the crack of a rifle' which causes him to be released and 'dropped to the earth' where he 'lay without sense or motion', and he would certainly die if he had not been rescued by his party.

The battle between the ape-men and humanity is not 'over' until Challenger's party and the Indians of the plateau band together in order to 'slaughter' as many ape-men as possible.[164] This 'desperate struggle in which for a time' the humans were barely able to sustain their attack, lasted 'for an hour or more', and it seemed, at times, that the ape-men would be victorious:

> ape-men with huge clubs broke in upon the Indians and often felled three or four of them before they could be speared. Their frightful blows shattered everything upon which they fell. One of them knocked Summerlee's rifle to matchwood and the next would have crushed his skull had an Indian not stabbed the beast to the heart. Other ape-men in the trees above us hurled down stones and logs of wood, occasionally dropping bodily on to our ranks and fighting furiously until they were felled. Once our allies broke under the pressure.[165]

My initial claim that the ape-men would surely outcompete gun-less humans is substantiated here when Malone asserts that 'had it not been for the execution done by our rifles' the Indians would be no match for the ape-men, and 'they would certainly have taken to their heels'.[166] The aid of the gunfire spurs the Indian tribe on, until the point where 'in a moment came the panic and the collapse' of the ape-men's defences.[167] The humans emerge victorious because the ape-men are 'too slow to escape from the active savages'.[168] In this way, it is clear that the ape-men excel at close melee combat due to their superior size and strength, but they will be outrun in a pursuit, and are vulnerable to projectile attacks from afar as they have large surface areas and are thus relatively easy targets.

On the subject of which species is more fit to survive, the text is somewhat inconclusive. It is evident that the Indians upon the plateau have adapted in order

to survive in their unique environment, and they are able to do so effectively. The same can be said for the ape-men, who occupy a separate niche upon the plateau, because indeed the two species live on either side 'of the central lake'.[169] In this way, they both may be equally fit for survival until they come into direct competition with one another, in which case, as stated, the two species have their individual strengths and weaknesses in battle. Challenger's party, as an unfamiliar species upon the plateau, is certainly fit for survival in their modern world, but upon the plateau it encounters many unfamiliar environments and situations, and is only able to survive with the help of advanced weaponry, and the help of the well adapted Indian tribe.

It is not only the Indians and other animals who have become well adapted to life upon the plateau, as Malone notices that

> in these great wastes of forest, life, which abhors darkness, struggles ever upwards to the light. Every plant, even the smaller ones, curls and writhes to the green surface, twining itself round its stronger and taller brethren in the effort. Climbing plants are monstrous and luxuriant, but others which have never been known to climb elsewhere learn the art as an escape from that sombre shadow, so that the common nettle, the jasmine, and even the jacitara palm tree can be seen circling the stems of the cedars and striving to reach their crowns.[170]

In this way, all plant life is in constant competition with one another for space, nutrients, and light. The common behaviour of some plants has altered in order for them to be better adapted to their environment, and thus more fit for survival. All of the instances of struggle mentioned thus far conform to Darwin's notion of the struggle for existence, as they show that those best adapted, or best equipped for battle will triumph over those who are not.

In *Dracula* this is also the case, with Harker admitting his vulnerability by recounting that 'I knew then that to struggle at the moment against the Count was useless. With such allies as these [wolves] at his command, I could do nothing'.[171] The Count and the wolves are both superior to Harker in terms of speed, strength, and weaponry in the form of teeth and claws. This is because, like Challenger and his party, Harker is adapted for a modern life in which the struggle for existence is eased by manmade weaponry, machinery, and other human inventions. The Count and the wolves, in contrast, are adapted for nocturnal hunting. Harker is caught in their prime hunting environment, unarmed, and outnumbered, and thus he must surrender.

Once Lucy is bitten by the Count she begins to 'fade' and she 'struggles for breath'.[172] At one stage in the text, Lucy is unconscious, 'white and still more drawn', and she 'did not respond' to a blood transfusion 'well'.[173] Seward notes that 'her struggle back into life was something frightful to see and hear', and this is due to the fact that her transition into a vampire is being competed against by the transfusion. There are two forces at war within Lucy: the supernatural, and the scientific. Lucy also exhibits a struggle between lawfulness and instinct in that on the one hand she is becoming a vampire, which brings with it its own base urges, but on the other hand she is being cared for in civilised company, and thus she must retain her ladylike persona. Seward perceives that Lucy 'was very sweet to the professor (as she always is), and tried to make him feel at ease; though I could see that the poor girl was making a hard struggle for it'.[174] Lucy is thus undergoing two internal struggles: one for her civilised cultural self, and one for her physical self.

Doctor Patrick Hennessey later files a report to Seward about the mental patient Renfield escaping 'through the window of his room', and attacking three

'burly men', and Hennessy himself, who he describes as 'no light weight'.[175] Renfield is described as 'pulling one of them off the cart … to knock his head against the ground', and it is feared that if Hennessey 'had not seized him just at the moment I believe he would have killed the man there and then'.[176] Renfield began 'pulling' the men 'to and fro as if [they] were kittens'.[177] It is not until some attendants arrive and 'were putting a strait-waistcoat on him' that he is able to be restrained and returned to the asylum.[178]

The underlying struggle within the text is that between the Count and the main characters. Mina states that 'in the struggle which we have before us to rid the earth of this terrible monster we must have all the knowledge and all the help which we can get'.[179] Knowledge is crucial as it acts in the same way as a biological adaptation, setting up the characters with the means of outcompeting the Count. Knowledge can, of course, not make up for a disparity in physical strength, and thus some attempts to subdue the Count are unsuccessful. Renfield reports that the Count

> had to come out of the mist to struggle with me. I held tight; and I thought I was going to win, for I didn't mean Him to take any more of [Mina's] life, till I saw His eyes. They burned into me, and my strength became like water. He slipped through it, and when I tried to cling to Him, He raised me up and flung me down.[180]

It is knowledge of the Count's vulnerabilities in the daylight hours which helps to form a plan of attack in which physical strength will not be a factor. Van Helsing posits that 'our best hope is to come on him when in the box between sunrise and sunset; for then he can make no struggle, and we may deal with him as we should'.[181] The Count is indeed able to be killed whilst his struggle for existence is in hiatus. 'Jonathan's great knife' is able to

> shear through the throat; whilst at the same moment Mr. Morris's bowie knife plunged into the heart. It was like a miracle; but before our very eyes, and almost in the drawing of a breath, the whole body crumbled into dust and passed from our sight.[182]

Thus ends the great Darwinian struggle for existence which lies at the heart of *Dracula*.

As with Mina in *Dracula*, the lawful and moral Jekyll in *Jekyll and Hyde* battles an internal struggle when he 'began to be tortured with ... Hyde struggling after freedom'. He laments that his 'devil had been long caged, he came out roaring'. He 'was conscious ... of a more unbridled, a more furious propensity to ill'.[183] It is clear that by allowing his 'lower side' (or bestial side) to be 'so long indulged', Jekyll has opened Pandora's box, and Hyde begins 'to growl for licence'. Jekyll describes himself as being 'cursed with' a 'duality of purpose'.[184] This is indeed the burden of humanity at large, presented in micro form. It is not a case of Hyde consuming Jekyll, rather it is a case of Jekyll allowing Hyde, his Double, to surface. Jekyll remarks that he 'had voluntarily stripped' himself 'of all those balancing instincts by which even the worst of us continues to walk with some degree of steadiness among temptations' and, in Jekyll's case, 'to be tempted, however slightly, was to fall'.[185] Much of the difficulty which Jekyll faces comes from his 'lower' instinct taking on a persona. He thus becomes embroiled in a struggle for existence with Hyde. Jekyll tries to threaten Hyde with suicide (which would of course kill them both) and he tries to suppress Hyde in several ways. Jekyll is ultimately unsuccessful in that Hyde's 'love of life is wonderful'. He recalls that

> Hyde in danger of his life was a creature new to me; shaken with inordinate anger, strung to the pitch of murder, lusting to inflict pain. Yet

the creature was astute; mastered his fury with a great effort of the will.[186]

In this way, the text is primarily concerned with this external struggle which culminates in the death of both personas. It is a great struggle for existence, such as that seen in *Dracula* between the Count and the main characters, which ultimately ends in death. In the case of *Jekyll and Hyde*, it is impossible for either of the competing characters to survive, as they inhabit the same body.

Reversion

The notion that humans might ... "devolve" presumes ... a ... hierarchy.[187]

The idea of devolution is inherent in all of the texts in this chapter, but each author depicts it in different ways. Butler stresses that an overreliance on machines will lead to humankind's devolution, whilst Kingsley suggests that it is laziness which will produce this change. 'Book of Machines' and *Water Babies* thus imply that it is a decrease in the struggle for existence which will lead to devolution. Doyle and Stevenson focus on the idea of the Double, or that humans have an atavistic Other lurking beneath the surface, whilst Stoker explores the concept of disease acting like regression, or disease as regression itself. Kingsley, Stevenson, and Stoker have all given their main characters double personas, in that Tom, Jekyll, and the Count are each explicitly portrayed as their own Doubles. This is done in order to emphasise the controversial idea of the animal within the human.

Devolution is addressed in 'Book of Machines' when the 'writer' is musing over humanity's reliance on machines. In his view, the elimination of machines would render any 'miserable individuals' who 'might linger' in the wake of the elimination 'worse than monkeys' over the space of 'a year or two'.[188] The 'writer' fears that humanity's reliance on machines as 'extra-corporal limbs' may lead to the 'degeneracy of the human race'. This is because 'machines

would so equalise men's powers', thus lessening 'the severity of competition' (in other words, easing the struggle for existence) so that 'many persons of inferior physique would escape [the] detection' of natural selection, and thus would 'transmit their inferiority to their descendants'.[189] This prediction relies on the failure of natural selection, and it assumes that once humans no longer require what are currently considered to be the best physiques or traits, that the struggle for existence will even out. This cannot be the case if one has a correct understanding of Darwin's concept of natural selection. Natural selection would, as explained earlier, simply begin to select for different traits. Humans would acquire adaptations which assisted them in their new machine-dominated environment. It is not possible, using Darwin's theories as he intended, to predict whether or not machines would contribute to the eventual extinction of humanity.

Charles Kingsley depicts a world in which laziness, rather than machine dominance, is the precursor to humankind's extinction. Kingsley overtly addresses the fear of devolution by introducing the 'Doasyoulikes', a group of humans who have regressed into apes because they have ceased to do hard work. This group mirrors that of the Eloi in *Time Machine* in that the Doasyoulikes were once 'lazy', and 'comfortable, easy-going, happy-go-lucky people'.[190] The Doasyoulikes originally need 'no weapons, for no enemies ever came near their land; and no tools, for everything was readymade to their land'.[191] This description also mirrors the Eloi in that they have no weapons or tools because they live in the remnants of an extinct society, with other requirements being provided for them by the Morlocks. Like the Eloi, the Doasyoulikes' attitude to hard work has eventually caused them to be easy pickings for prey animals. The Eloi are vulnerable under the cover of darkness, whilst the Doasyoulikes are vulnerable on the ground, and as a result they were all living up in trees. The

regression of the Doasyoulikes spans 3,000 years. During this time natural selection is still at work, with adaptation and the survival of the fittest in full swing.

The first adaptation that the Doasyoulikes go through is that 'their jaws grow large, and their lips grow coarse'.[192] This results from a change in diet, brought about by necessity, as all 'the flapdoodle trees were killed by the volcano, and they had eaten all the roast pigs'.[193] This change in diet results in the death of 'all the weakly little children', which shows that only some members of the group were fit enough to survive under the new conditions.[194] The next adaptations result from the aforementioned forced change in dwelling from the ground to the trees. This move creates 'great, hulking, broad-shouldered chaps', and again results in the survival of the fittest, or 'only the strongest and most active ones'.[195] Later, the move also sees their feet change 'very oddly', so that they can 'hold the branches with their great toes, as if they had been thumbs'.[196] When the climate changes to be 'so damp' natural selection favours the Doasyoulikes with hairy bodies, whilst the hairless ones 'coughed and sneezed, and had sore throats, and went into consumptions'.[197] The Doasyoulikes eventually alter to the point where Tom declares 'that they are all apes'.[198]

In the *Water Babies* there is a 'downhill as well as an uphill road'. The fairy tells Tom that she 'can turn beasts into men ... [and] by the same laws of circumstances, and selection, and competition, turn men into beasts'.[199] Tom goes through the change of beast to man in that he evolves from a dirty, 'little black ape' and a 'small black gorilla', to 'a great man of science'.[200] This mirrors the nineteenth-century idea that if mankind evolved from apes (as of course, it did not; rather the two species are said to share a common ancestor), uncivilised humans were considered ape-like by progressive evolutionists, as they were

perceived as less evolved or devolved. The inclusion of the word 'black' into the bestial descriptions of Tom is likely not coincidental, in that Charles Kingsley was known for racial profiling. He believed that "race" is a product of both genetic and behavioural traits; a view which many critics regard as an inbuilt characteristic of nineteenth-century society.[201]

Whilst Kingsley focuses on the consequences of a relaxed struggle for existence, his narrator does approach the idea of the Double, or the notion that everyone has an atavistic Other, by saying that 'everything on earth had its double in the water'.[202] The rebuttal is that 'the water things are not really akin to the land things', but 'they are, in millions of cases, not only of the same family, but actually the same individual creatures' such as the 'green drake, and an alder-fly, and a dragon-fly', which all 'live under water till they change their skins'.[203] This, of course, is in reference to Tom's own transformation, but the idea that one creature can be its own Double also echoes the doubling of Dr. Jekyll and Mr. Hyde, who are of course two personas in the same body. This is seen in *Dracula*, also, in that the Count can morph between man and bat; thus he too is his own Double.

The idea that everything has a Double is stressed in *Lost World* by the aforementioned 'human face' which confronts Malone. The uncanny resemblance of this face to his own shows that it represents a Double, or the animal within the human.[204] As discussed in the 'Comparing Species' section of this chapter, Challenger is often likened to an ape-man upon the plateau.[205] The ape-man is Challenger's Double. The hunting of Challenger's party by the ape-men is thus a reflection of the animalistic nature within all humans, the very nature which Wells' Prendick, and Stevenson's Jekyll unsuccessfully attempt to repress.

Several scholars have treated Stevenson's Hyde as atavistic.[206] It is natural

to do so in that Hyde is undoubtedly animalistic. His traits suggest atavism to a distant and arguably pre-human ancestor. Mr Utterson confirms as much, reflecting that Hyde 'seems hardly human', and instead resembles 'something troglodytic'.[207] Utterson attributes Hyde's animalism to his 'savage laugh', which he 'snarled aloud' like a predator. His 'extraordinary quickness' is also reminiscent of such animals as the cockroach or the spider. In addition, 'he spoke with a husky, whispering and somewhat broken voice'. This is a peculiarity which dehumanises Hyde if the speech-centric approach to intelligence is enforced.[208] In this way, *Jekyll and Hyde* is *Moreau's* double. Both texts deal with the human-animal boundary, and they mirror one another in that *Moreau* deals with forced evolution, from beast to man, whilst *Jekyll and Hyde* deals with atavism, from man to animal.

To stress the idea of atavism in *Jekyll and Hyde*, Hyde is constantly referred to in animalistic terms. He is often described as ape-like, as he plays 'ape-like tricks', has 'ape-like spite', and jumps 'like a monkey'.[209] The emphasis on Hyde as 'ape-like' is connected to Cesare Lombroso's idea of the Criminal Type. Lombroso was a nineteenth-century criminologist who believed that all atavistic criminals share a similar set of physiological characteristics, or 'stigmata', which are indicative of reversion to 'ape-like ancestry'.[210] Hyde's 'complete moral insensibility' could thus be read as a direct result of his ape-like characteristics.[211] Lombroso's notion of the Criminal Type has since been discredited, however, and is most useful for highlighting nineteenth-century anxieties about reversion.[212]

The Count in *Dracula* is referred to as 'a criminal and of criminal type' by Mina. She demonstrates her knowledge of such a concept when she continues to surmise that 'Lombroso would so classify him, and *quâ* criminal he is of imperfectly formed mind'.[213] Mina is a young school mistress, educated in the

wake of Darwin's *Origin*; a backstory which explains her familiarity with such theories. Doctors Van Helsing and Seward (who, logically, are more educated than Mina) never allude to Lombroso, and they are never explicitly stated as having studied evolution. There is ample textual evidence to suggest, however, that they both have a working knowledge of Darwinian ideas, as would be expected of doctors in their era. I have specifically identified instances which show that the doctors are familiar with Darwin's reversion concept, and devolution.

Firstly, Seward is devoted to the 'psychological study' of 'lunatics'.[214] He believes that their afflictions are diseases, because 'not to be all well is a disease'.[215] This implies that any unsavoury departure from 'normal' health, be it physical or mental, is considered a sign of disease. The idea that all components of 'madness', such as 'derangement', 'violence', and 'maniacalness' are signs of degeneration was advocated by real-world nineteenth-century psychologist Henry Maudsley. In this way, the patients at Seward's asylum would inherently be classed as degenerative. [216]

This is certainly the case with Seward's 'lunatic' patient Renfield, who has an animalistic approach to eating. Seward's attendant finds that Renfield has 'eaten his birds, and that he just took and ate them raw'.[217] In addition, he is observed starting to 'sniff about as a dog does when setting', and he is said to have 'fought like a tiger' upon being caught outside of the asylum.[218] Seward characterises Renfield as being 'immensely strong', and 'more like a wild beast than a man', who 'might have done wild work before he was caged'.[219] The link between madness and animalistic qualities here demonstrates that disease can present as regression or atavism, and thus be interpreted as such.

Van Helsing is said to know 'as much about obscure diseases as any one

[sic] in the world', and 'he knows what he is talking about better than any one [sic] else. He is a philosopher and a metaphysician, and one of the most advanced scientists of his day'.[220] The fact that Van Helsing is 'advanced' is enough to suggest that he has a working knowledge of evolution.[221] It is his knowledge of 'obscure diseases' which suggests that he is well familiar with reversion and devolution.

As previously noted, disease can present like regression if it elicits psychological changes and uncharacteristic or immoral behaviour, such as it does in Renfield. This also happens to Mina after she has been bitten by Dracula and begins to transition into a vampire. Van Helsing remarks that 'she was not like herself. She sleeps, and sleeps, and sleeps! She who is usual so alert, have done literally nothing all the day; she even have lost her appetite'.[222] Van Helsing considers her to be 'tainted' by 'that Vampire baptism', a phrase which links Mina's affliction back to Christianity. It is Christian doctrine which will be the cure for the characters' diseases, as is suggested by ejaculations such as 'God preserve my sanity', and 'Great God! merciful God! Let me be calm, for out of that way lies madness indeed'.[223]

Extinction

Extinction is a perfectly natural response to changing … conditions.[224]

Extinction threatens every organism, and every manmade product on Earth. It only requires that an organism or product be outcompeted, or be rendered superfluous in some respect. In 'Book of Machines' it is posited by the 'writer' that manmade products such as 'the watch, for example', which is 'but a development of the cumbrous clocks that preceded it' will supersede clocks 'in which case [clocks] will become as extinct as ichthyosauri'.[225] This is due to the

undeniable fact that ‘as soon as a machine fails to discharge the service which man expects from it, it is doomed to extinction’.[226] This is seen in current societies, with the near-constant invention or upgrading of, for example, computer software, and hand-held electronic devices. In this way, it is easy to see the analogy between extinction in the natural world, and extinction in the mechanical world. It is also important to again acknowledge the link, or mutualism, between the natural and the man-made world, in that Butler’s ‘writer’ assumes that if ‘the race of man should … be left as it were naked upon a desert island, we should become extinct in six weeks’.[227] In this way, ‘Book of Machines’ addresses the analogy between the extinction of machines and humans, whilst also looking at the distinct circumstances which would render either group extinct.

The *Lost World* employs Challenger and Summerlee to discuss the extinction of dinosaurs. They both believe that dinosaurs became extinct due to there being ‘no room for reason in their tiny cranial cavities, and that if they have disappeared from the rest of the world it was assuredly on account of their own stupidity.’[228] The existence of dinosaurs and other organisms, which are extinct everywhere except for upon the plateau, is largely the focus of *Lost World*, alongside the aforementioned struggle for existence between, and within, the different species present.

Kingsley’s narrative shows the extinction of the Doasyoulikes, the race previously discussed in relation to regression. The final ape-like member, who ‘stood full seven feet high’, mirrors the question of ‘are we not men?’ in Dr Moreau, as upon being shot the ape attempts to ask ‘am I not a man and a brother?’ which is, of course, quoted verbatim from the historical Wedgwood plate.[229] This group becomes extinct as a result of doing as they like, versus behaving ‘like men’, or ‘doing what they did not like’.[230] Whilst this is often read

as a warning against succumbing to base desires, sinning, or being uncivilised, a Darwinian reading focusses on the Doasyoulikes' extinction, which is simply due to being rendered superfluous, and thus being outcompeted.

Stoker does not overtly address extinction, but I argue that the death of Dracula is a kind of extinction. His death follows that of the three 'weird sisters', or the female vampires. Van Helsing 'nerved' himself to kill them as they lay dormant in their tombs, and 'there had been only three of these Un-Dead phantoms', thus he rightly assumes that 'there were no more of active Un-Dead existent', bar the Count.[231] The novel does not suggest that more vampires exist outside of the realm of Transylvania, and thus the Count's death marks the extinction of his "race".

Jekyll and Hyde does not offer any insight into extinction, and it would not be useful to treat the simultaneous death of Jekyll and Hyde as a kind of extinction. To do so would imply the extinction of all those who suffer from some form of split personality. On a symbolic level, it would reflect the extinction of all of humanity in that, as discussed, Jekyll and Hyde's dual nature is representative of that within each and every human being.

This chapter, and the preceding discussion of Wells' fiction, show that in the immediate wake of the *Origin*, Darwin's ideas and Darwinism were rife in the scientific romance and gothic fiction of the day. Butler, Kingsley, Doyle, Stoker, and Stevenson all explore Darwinian concepts in different ways, and each text focusses on some concepts more than others. At times Darwin is an antagonist to be challenged, but the overwhelming evidence points to a deep-rooted internalisation of Darwin's theories by these authors to the extent that their fiction bears a distinctly Darwinian imprint. On some occasions this is due to a conscious tapping in to scientific education, and on others it is the result of a more

unconscious reflection of subtle influences. It is Stoker's *Dracula* into which I was able to provide the most new Darwinian insight, as it is commonly read through a biblical lens, and does not overtly speak of evolutionary principles. In Stevenson's *Jekyll and Hyde*, I was able to identify the characters who have a working knowledge of evolution and selection, and I shed new light on the adaptive, evolutionary characteristics of Hyde.

Having demonstrated the deep-seated influence of Darwin's ideas on nineteenth-century fantasy fiction, I now turn to the continued presence of Darwin's legacy in more recent fiction. In both neo-Victorian re-evaluations of the nineteenth century, and in Steampunk re-imaginings of this era, Darwin continues to be a haunting presence.

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[1] Charles Darwin, *The Descent of Man and Selection in Relation to Sex* (Champaign, IL: Project Gutenberg, 2013), chap. xxi.

[2] Samuel Butler, *Erewhon*, ed. by Peter Mudford (London: Penguin, 1985), p. 30; Glenn O. Carey, 'Samuel Butler's Theory of Evolution: A Summary', *English Literature in Transition, 1820-1920*, 7.4 (1964), 230-3 (p. 232).

[3] Carey, pp. 230-1.

[4] Carey, p. 231.

[5] Hans-Peter Breuer, 'Samuel Butler's "The Book of the Machines" and the Argument from Design', *Modern Philology*, 72.4 (1975), 365-83 (p. 383).

[6] Breuer, pp. 369-70.

[7] Charles Kingsley, *The Water Babies*, unabridged, revised (Ware, Hertfordshire: Wordsworth, 1994), p. 46.

[8] Ibid.

[9] Ruth Murphy, 'Darwin and 1860s Children's Literature', *Journal of Literature and Science*, 5.2 (2012), 5-21 (p. 11).

[10] Murphy, p. 5.

[11] Arthur Conan Doyle, *The Lost World of Arthur Conan Doyle*, Collector's Anniversary Edition, ed. by John R. Lavas, illus. by John R. Lavas and Zdeněk Burian (Auckland: J.R. Lavas, 2002), p. ix.

[12] John R. Lavas, 'Introduction', in *The Lost World of Arthur Conan Doyle*, Collector's Anniversary Edition, by Arthur Conan Doyle, ed. by John R. Lavas, illus. by John R. Lavas and Zdeněk Burian (Auckland: J.R. Lavas, 2002), ix-lvii (p. xii).

[13] John Glendening, *Evolutionary Imagination in Late-Victorian Novels* (Farnham: Ashgate, 2007), p. 119.

[14] Joseph Fisher, 'The History of Landholding in Ireland', *Transactions of the Royal Historical Society*', 5 (1877), 228–326, in 'Social Darwinism', *The Oxford English Dictionary* <http://www.oed.com/view/Entry/183739?redirectedFrom=social+darwinism+#eid21924501>[accessed 1 March, 2015].

[15] Darwin, *Descent*, p. 926.

[16] Doyle, p. 84.

[17] Doyle, pp. 5-6.

[18] Doyle, p. 22.

[19] Stefan Lampadius, 'Evolutionary Ideas in Arthur Doyle's *The Lost World*', *Der andere Doyle: Internationale Tagung*, 20:21 (2011), 68-97 (p. 70).
[20] John R. Lavas, 'Introduction', *The Lost World of Arthur Conan Doyle*, Collector's Anniversary Edition, by Arthur Conan Doyle, ed. by John R. Lavas, illus. by John R. Lavas and Zdeněk Burian (Auckland: J.R. Lavas, 2002), ix-lvii (p. xviii).
[21] Lavas in Doyle, p. xviii.
[22] Doyle, p. 12.
[23] Doyle p. 63.
[24] Doyle, p. 84.
[25] Breuer, p. 379.
[26] Ibid.
[27] Butler, pp. 29-30.
[28] Butler, p. 214.
[29] Hans-Peter Breuer, p. 368.
[30] Butler, p. 202.
[31] Butler, p. 201.
[32] Kingsley (1994), p. 47.
[33] Glendening, p. 108.
[34] Bram Stoker, *Dracula*, ed. by Roger Luckhurst (Oxford: Oxford, 2011), p. 5.
[35] Stoker, pp. 5, 11.
[36] Stoker, p. 7.
[37] Stoker, p. 89.
[38] Stoker, p. 22.
[39] Stoker, p. 160.
[40] Stoker, p. 161.
[41] Stoker, p. 175.
[42] Stoker, p. 18.
[43] Stoker, p. 20.
[44] Stoker, p. 46.
[45] Stoker, p. 47.
[46] Stoker, pp. 47-48.
[47] Stoker, p. 47.
[48] 'I Will Rise Up', *True Blood*, dir. by Scott Winant, writ. by Nancy Oliver (Your Face Goes Here Entertainment, 2009).
[49] Elizabeth Miller, *A Dracula Handbook* (Bloomington IN: Xlibris Corporation, 2005), p. 125.
[50] Stoker, p. 27.
[51] Stoker, p. 294.
[52] Stoker, p. 223.
[53] Stoker, p. 13.
[54] F. J. Ollivier and others, 'Comparative morphology of the tapetum lucidum (among selected species)', *Veterinary Ophthalmology*, 7.1 (2004), 11-22 (p. 11).
[55] Stoker, p. 213.
[56] Stoker, p. 8.
[57] Stoker, p. 349.
[58] Dante, *The Divine Comedy*, trans. by Henry Wadsworth Longfellow (Champaign, IL: Project Gutenberg, 1997), canto 3.
[59] Dante, canto 8.
[60] *The King James Bible Online* <http://www.kingjamesbibleonline.org/book.php?book=Revelation&chapter=12&verse 1&t=1>Revelation 12:1 [accessed 1 March, 2015].
[61] *The King James Bible Online* <http://www.kingjamesbibleonline.org/Genesis 3:1/>Genesis 3:1 [accessed 1 March 2015].
[62] Stoker, pp. 13, 41.
[63] Stoker, p. 88.
[64] Robert Louis Stevenson, *Strange Case of Dr Jekyll and Mr Hyde and Other Tales*, ed. by Roger Luckhurst (Oxford: Oxford University Press, 2008), p. 54.
[65] Charles Darwin, *On the Origin of Species*, ed. by Jim Endersby (Cambridge: Cambridge University Press, 2009), p. 159.
[66] Stevenson, p. 53.
[67] Ibid.
[68] Stevenson, p. 54.

[69] Ibid.
[70] Stevenson, p. 11.
[71] Stevenson, pp. 12, 45.
[72] Stevenson, p. 12.
[73] Stevenson, pp. 60, 52.
[74] Glendening, p. 53.
[75] Butler, p. 198.
[76] Ibid.
[77] Ibid.
[78] D. R. Oldroyd, *Darwinian Impacts: An Introduction to the Darwinian Revolution* (Milton Keynes: Open University Press, 1980), p. 195.
[79] Kingsley (1994), p. 95.
[80] Ibid.
[81] Ibid.
[82] Kingsley (1994), p. 45.
[83] Kingsley (1994), p. 95.
[84] Doyle, p. 19.
[85] Doyle, p. 67.
[86] Doyle, p. 66.
[87] Doyle, p. 78.
[88] Stoker, p. 139.
[89] Stoker, p. 190.
[90] Stoker, p. 191.
[91] Michael J. Dougherty, 'Is the Human Race Evolving or Devolving?', *Scientific American* (1998)< http://www.scientificamerican.com/article/is-the-human-race evolvin/>[accessed 28 September 2014].
[92] Butler, p. 206.
[93] Butler, p. 210.
[94] Butler, pp. 228-9.
[95] Butler, p. 228.
[96] Kingsley (1994), p. 48.
[97] Ibid.
[98] Kingsley (1994), pp. 48-49.
[99] Kingsley (1994), p. 49.
[100] Christopher Hamlin, 'Charles Kingsley: From Being Green to Green Being', *Victorian Studies*, 54.2 (2012), 255-281 (p. 255).
[101] Murphy, p. 11.
[102] Samuel Taylor Coleridge, *The Rime of the Ancient Mariner*, in Kingsley, p. 53.
[103] Genesis, 1:28.
[104] Kingsley (1994), pp. 46-7.
[105] Charles Kingsley, *The Water Babies* (Champaign, IL: Project Gutenberg, 1997), chap. 2 <http://www.gutenberg.org/dirs/etext97/wtrbs10h.htm> [accessed 11 March 2015].
[106] Lampadius, p. 78.
[107] Doyle, p. 53.
[108] Lampadius, p. 84.
[109] Doyle, p. 73.
[110] Doyle, p. 80.
[111] Doyle, p. 89.
[112] Ibid.
[113] Doyle, p. 83.
[114] Doyle, p. 20; *Adelobasileus cromptoni* bears a slight physical resemblance to a kangaroo rat, and has been considered the common ancestor of modern mammals since 1990.
[115] Doyle, p. 78.
[116] Lampadius, p. 84; Doyle, p. 78.
[117] Doyle, p. 78.
[118] Lampadius, p. 74.
[119] Lampadius, p. 7.
[120] Lampadius, p. 82.
[121] Doyle, *Lost World*, p. 65.

[122] Stoker, *Dracula*, p. 35.
[123] Stoker, *Dracula*, p. 213.
[124] Stoker, *Dracula*, p. 284.
[125] Stevenson, p. 9.
[126] Stevenson, p. 48.
[127] Stevenson, pp. 64-65.
[128] Stevenson, p. 65.
[129] Stevenson, pp. 20-21.
[130] Stevenson, p. 14.
[131] Stevenson, p. 15.
[132] Stevenson, p. 41.
[133] Darwin, *Descent*, chap. VII.
[134] Stoker, pp. 44, 227.
[135] Butler, p. 207.
[136] Ibid.
[137] Ibid.
[138] Butler, p. 222.
[139] Kingsley (1997), chap. 1.
[140] Ibid.
[141] Kingsley (1997), chap. 3.
[142] Ibid.
[143] Kingsley (1997), chap. 2.
[144] Kingsley (1997), chap. 4.
[145] Ibid.
[146] Ibid.
[147] Ibid.
[148] Kingsley (1997), chap. 7.
[149] Ibid.
[150] Ibid.
[151] Kingsley (1997), chap. 2.
[152] Darwin, *Descent*, p. 937.
[153] Doyle, p. 79.
[154] Darwin, *Descent*, p. 937.
[155] Doyle, p. 17.
[156] Doyle, p. 73.
[157] Doyle, p. 78.
[158] Doyle, p. 81.
[159] Ibid.
[160] Ibid.
[161] Doyle, p. 80.
[162] Doyle, p. 85.
[163] Ibid.
[164] Doyle, p. 86.
[165] Doyle, p. 89.
[166] Ibid.
[167] Ibid.
[168] Ibid.
[169] Doyle, p. 82.
[170] Doyle, p. 35.
[171] Stoker, p. 49.
[172] Stoker, p. 91.
[173] Stoker, pp. 137, 140.
[174] Stoker, pp. 107-8.
[175] Stoker, p. 146.
[176] Ibid.
[177] Ibid.
[178] Ibid.
[179] Stoker, p. 207.
[180] Stoker, p. 261.
[181] Stoker, p. 296.
[182] Stoker, p. 350.

[183] Stevenson, p. 60.
[184] Stevenson, p. 62.
[185] Stevenson, p. 60.
[186] Stevenson, p. 63.
[187] Dougherty (1998).
[188] Butler, p. 207.
[189] Butler, p. 224.
[190] Kingsley (1997), chap. 6.
[191] Ibid.
[192] Ibid.
[193] Ibid.
[194] Ibid.
[195] Ibid.
[196] Ibid.
[197] Ibid.
[198] Ibid.
[199] Ibid.
[200] Kingsley (1997), chap. 1, chap. 8, Murphy, p. 11.
[201] Hamlin, p. 262.
[202] Kingsley (1997), chap. 2.
[203] Ibid.
[204] Doyle, *Lost World*, p. 65.
[205] Doyle, p. 78.
[206] See: Larissa Schumacher, *Who is the Monster? A Discussion of Monstrosity from Shelley to Stoker* (Dissertation, University of Waikato, 2012), p. 9; Glennis Byron and David Punter, *The Gothic* (Oxford: Blackwell, 2004), p. 227.
[207] Stevenson, p. 16.
[208] Stevenson, p. 15.
[209] Stevenson, pp. 39, 65, 66.
[210] Ramsland, p. 70.
[211] Stevenson, p. 60.
[212] Ramsland, p. 70.
[213] Stoker, p. 317.
[214] Stoker, pp. 54, 228.
[215] Stoker, p. 108.
[216] Sharla Hutchison, 'Disease and Degeneration in Marie Corelli's Vendetta', *English Literature in Transition, 1880-1920*, 56.2 (2013), 168-86 (p. 181).
[217] Stoker, p. 68.
[218] Stoker, p. 97.
[219] Stoker, p. 98.
[220] Stoker, p. 106.
[221] Bram Stoker, *Bram Stoker's Notes for Dracula: A Facsimile Edition*, ed. by Robert Eighteen Bisang, and Elizabeth Miller (Jefferson, North Carolina: McFarland, 2008), p. 277.
[222] Stoker, p. 336.
[223] Stoker, p. 37.
[224] Dougherty (1998).
[225] Butler, p. 202.
[226] Butler, p. 206.
[227] Butler, p. 207.
[228] Doyle, p. 75.
[229] Kingsley (1997), chap. 6.
[230] Ibid.
[231] Stoker, p. 344.

Chapter 3: Darwin and Neo-Victorian Fiction

We must recognize the Victorian past in order to engage with the contemporary present.[1]

The presence of Darwin's ideas in nineteenth-century texts reflects the fact that the *Origin* and the *Descent* revolutionised scientific thought and created tension between science and faith. The core Darwinian theories were appropriated by subsequent theorists advocating Social Darwinism and warning of the dangers of degeneration. This period of intellectual and cultural ferment continues to inspire authors. Neo-Victorian texts transport us back to this era of unrest to revisit and reappraise Darwin's discoveries, and to reflect on the points of difference and continuum between the nineteenth century and the contemporary world. The anxieties around extinction and devolution have now been laid to rest, but debates about criminality, assumed superiority, and the relationship between science and religion continue.

In contrast to the previous two chapters, which commented on the Victorian period from within a nineteenth-century context, the texts in this chapter look back on the past from the perspective of the contemporary world. The appropriate terminology for such texts is hotly debated, with Andrea Kirchknopf surveying the rival merits of 'neo-Victorian', 'retro-Victorian', and 'post-Victorian'.[2] While Kirchknopf makes a case for 'post-Victorian', neo-Victorian is steadily emerging as the favoured term, with the editors of the new journal *Neo-Victorian Studies* and the authors of *Neo Victorianism: The Victorians in the Twenty-First Century, 1999-2009* consolidating its usage.[3] Dana Shiller's article 'The Redemptive Past in the Neo-Victorian Novel' introduced the term neo-Victorian 'as at once characteristic of postmodernism and imbued with a

historicity reminiscent of the nineteenth century novel'.[4] Daniel Bormann provides a particularly useful triple definition of the term:

> [a] neo-Victorian novel is a fictional text which creates meaning from the background of awareness of time as flowing and as poised uneasily between *the Victorian* past and the present; which secondly deals dominantly with topics which belong to the field of history, historiography and/or the philosophy of history *in dialogue with a Victorian past*; and which thirdly can do so at all narrative levels and in any possible discursive form, be it through the narration of action, through static description, argumentative exposition or stream-of-consciousness techniques.[5]

My discussion is informed by Bormann's definition, but is also inflected with Marie-Luise Kohlke's insistence on the 'self-regarding' nature of 'today's critical engagement with the nineteenth century'. Kohlke argues that '[M]uch as we read Victorian texts as highly revealing cultural products of their age, neo-Victorian texts will one day be read for the insights they afford into twentieth and twenty-first century cultural history and socio-political concerns.'[6]

The neo-Victorian narratives that are the focus of this chapter include: *The French Lieutenant's Woman* (1969) by John Fowles; *Morpho Eugenia* (1992) by A.S. Byatt; *This Thing of Darkness* (2005) by Harry Thompson; *The Darwin Conspiracy* by John Darnton (2005) and *The Naturalist* (2014) by Thom Conroy. All of these authors are 'in dialogue with a Victorian past' centring on Darwin's discoveries. Some, such as Fowles, Byatt, and Darnton, overtly highlight the fissures between the nineteenth century and the contemporary world through their use of split narratives, juxtaposed time periods, and what Linda Hutcheon terms historiographic metafictional techniques.[7] Others, such as Thompson and Conroy,

immerse the reader directly in a nineteenth-century world. However, in all of these texts a neo-Victorian awareness of the way in which the past is mediated through the present is a constant. As Kohlke writes:

> To properly 'address' the manifold spectres of the nineteenth century, with which we cohabit in the present, also means addressing our own complex investments in resurrecting the past, acknowledging how desire makes the spectres dance to our tune, delimiting what we choose to hear when we make the ghosts speak — or speak for them.[8]

Darwin is the 'ghost' who dances and speaks in the texts discussed in this chapter. My focus is the different ways in which Darwin, as a character, has been portrayed, and the extent to which his real-world ideas influence the neo-Victorian narrative. Fowles, Byatt, Thompson, and Conroy all portray Darwin and his ideas in a predominantly favourable light, while *The Darwin Conspiracy* rewrites history and paints a picture of him as a murderous fraud.

This chapter is divided into the six by now familiar sections of evolution and selection; the history of humanity; comparing species; the struggle for existence; reversion; and extinction. Within each of these six sections, the texts will be discussed chronologically by publication date, with a particular focus on the juxtaposition of nineteenth-century versus contemporary perspectives on Darwin and evolution.

Evolution and Selection

'*Chance … co-operates with natural law to create living forms better … adapted to survive*'.[9]

All of the texts in this chapter discuss evolution and selection to some extent. *The French Lieutenant's Woman* overtly addresses this in a Darwinian sense, whilst also demonstrating cultural evolution. *Morpho Eugenia* and *The Darwin*

Conspiracy use characters who are aware of, and advocate Darwin's theories, whilst *This Thing of Darkness* and *The Naturalist* incorporate Darwin as a character who shares his namesake's views on evolution and selection. Throughout all of these texts there is an awareness that, while the authors meticulously evoke Victorian attitudes and debates, there has been a shift in thinking in the years between when the novels are set and the era in which they were written. Evolution and selection are no longer radical new ideas, but accepted scientific fact. At the same time, many of these authors are insistent that Darwin did not come to his conclusions in isolation, but rather articulated theories which a number of European scientists and Indigenous thinkers and leaders shared. In some texts this shared path to knowledge is depicted sympathetically, but in *The Darwin Conspiracy* Darwin becomes the villain — a shameless plagiarist of ideas not his own.

The French Lieutenant's Woman addresses arguments for and against the theory of evolution, seeking to replicate Victorian debates about this issue. Charles Smithson is a firm believer in the '*Scala Naturae*, the ladder of nature'.[10] In his view this requires that 'a new species cannot enter the world', but Darwin 'upset' this idea with *The Origin*.[11] The 'abstract idea of evolution' is 'entrancing' to Smithson, but the reality of it seems 'fraught with ostentatious vulgarity'.[12] He cannot understand how one animal can change into another, and he is sickened by the thought of humans descending from animals. Smithson's musings mirror the anxieties of the Victorian public at large, and serve as a window into nineteenth-century attitudes.

Fowles' narrator comes to embrace the concept of transmutation when he comments that '[t]he scientist is but one more form; and will be superseded'.[13] This implies two things. That evolution is indeed a continuous process; and that

mankind's understanding of the world will continue to change, perhaps to the point where science will not hold such great authority.

William Adamson, the protagonist in *Morpho Eugenia*, also believes that evolution is continuous. He is portrayed as a Darwin-inspired naturalist, fascinated by the study of ant behaviour. There are several instances in which Adamson refers to 'the observations of Mr Darwin', the first being when he is speaking to Harald Alabaster about potential experiments on the adaptations of 'certain ants that inhabit certain Bromeliads'.[14] Soon after this, he discusses the opinions of Darwin and Wallace in relation to sexual selection in butterflies. Darwin argues 'brilliantly coloured' male butterflies are endowed so as to attract a female, whilst Wallace argues that the 'drabness of the female is *protective* coloration'.[15]

Alabaster later reveals that Darwin's appeal was strong when he admits that if he himself 'were a young man now … I would be compelled towards atheistic materialism by the sheer beauty, the intricacy of the arguments of Mr Darwin'.[16] Alabaster's compulsion mirrors the entrancement which Smithson feels in *The French Lieutenant's Woman*. Both characters, though, give reasons for not subscribing to such ideas (Smithson's revulsion, and Alabaster's age) serving as a reminder that Darwin was an exciting but troubling influence. Alabaster does, however, suggest that Paley's idea of a divine creator is outdated now that, in the *gradual* action of Natural Selection, Darwin has provided an 'almost entirely satisfactory explanation … of slow change, over unimaginable millennia'.[17] This represents the fact that although a person may have a religious faith, they are capable and willing (like Alabaster), to acknowledge the reasoning behind Darwin's theories. This is but one way in which science and religion are shown to be able to coexist, perhaps reflecting the greater accommodations

between the two as the twentieth century progressed.

Adamson is able to observe evidence of evolution in the form of contrasting adaptations in red ants and Amazon ants. He describes an example of specialised adaptation becoming disadvantageous in that

> the Amazons have developed such powerful tools and weapons for fighting and thieving that they are unable to perform any other function, and depend entirely on their slaves to feed them and polish their ruddy armour. Their jaws cannot seize prey; they have to beg their slaves for food; but they can kill, and they can carry. It might be argued that Natural Selection has perfected these creatures as fighting machines, but in the process has rendered them irrevocably dependent and parasitic. We may ask if there are not lessons to be learned by ourselves from this curious and extreme social state.[18]

The extreme exaggeration of fighting characteristics in the Amazon ants can, of course, be used as evidence to support Darwin's theory of evolution. The comment at the end of the passage is addressing the fact that humans are risking a similar fate in several ways. In a twenty-first century context, humans are becoming highly skilled at producing technology, but in the process, are becoming reliant on the fruits of their labours.

Another seemingly disadvantageous consequence of evolution is described in relation to wood ants. Adamson observes that during the 'Nuptial flight of the Wood Ants', the majority of participants die. In his view, this 'exemplifies the remorseless random purposefulness of Dame Nature, of Natural Selection'.[19] Scenes such as this reinforce the way in which Adamson is being portrayed as an avid supporter of Darwin.

Morpho Eugenia uses Harald as a spokesperson for the Victorian public at large, just as *The French Lieutenant's Woman* uses Smithson. Alabaster asks '*What* dictates the coherent movement of all the cells in my body?'. He accepts that he is bound to 'laws which I obey and cannot alter', just as the 'lesser creatures on the earth' are. Despite this, he does not consider himself on a par with them in any other way. His main concern is that Darwin's theories imply 'Blind chance' over 'loving Providence', and thus Christianity, is put to question.[20]

In contrast to these devout characters, *The Darwin Conspiracy* showcases secular scientists who are studying finch behaviour and adaptation in the Galapagos. One such character, Nigel, describes the Island of Sin Nombre as 'Darwin's living laboratory', on which they can 'watch as natural selection works its daily miracles'.[21] This novel switches between Nigel's time period in the twenty-first century, and Darwin's era. Darwin features as a character who is very closely modelled on reality. Before setting out on the *Beagle* voyage in real life, he was not convinced that species were mutable. This opinion is reflected in the novel when, upon meeting Captain FitzRoy, he remarks that 'I am certainly not an atheist … I do not think that one species can transmute into another, despite the obvious similarities. I believe in the Divine Authority'.[22] As well as remaining loyal to the biographical facts, this quote sets up the journey of discovery Darwin is to experience as the novel progresses. His declaration of faith serves to foreshadow his eventual departure from such beliefs.

Later on in the novel, adaptation is addressed when the narrator comments that the birds which Darwin encountered on St. Paul's Rocks 'were so tame, the crewmen could walk right up and club them. They even grabbed some with their bare hands'.[23] The reason for this is later postulated by FitzRoy when he explains

to Darwin that 'the animals and birds, having no acquaintance with man, show no fear in proximity but rather blithe indifference'.[24] The birds have not yet learned or adapted behaviourally to evade humans.

Evidence of biological adaptation, leading to speciation, is provided in relation to Galapagos Island tortoises when 'Lawson … chanced to remark that he could tell which of the twenty or so islands any one of them had come from merely by examining its shell'.[25] It is here in the novel that Darwin first becomes convinced of finch adaptation, as '[t]hey too seemed to follow the rule that had caught the eye of the acting governor: on every island they displayed minute differences, as if adapting to their various habitats'.[26]

Richard Matthews, a historical crewmate of Darwin's on the *Beagle*, is given the role of a character who documents a summary of Chief Okanicutt's theories which, in the novel, Darwin claims as his own. Okanicutt says that

> *the simple thing became many complicated things. And those things changed and became more complicated and so on … Legs happened. Eyes happened*.[27]

Okanicutt talks of adaptation in giraffes, tortoises, and skunks, and the way in which every living thing is related. Matthews objects, as this theory implies that humans are related to apes, which he declares is '*a bit much*'.[28] This objection again brings to light the real-world Victorian fear of being related to 'lower' animals. Matthews goes on to defend the *Scala Naturae* when his '*eyes happened upon a ladder*'.[29] He tells Okanicutt that the ladder

> *represents the world as God made it. There are higher and lower species and they are forever fixed. We are at the top*.[30]

Okanicutt then argues that a tree

> *is the world as we see it. Each leaf is an animal, each branch a group of*

> *animals … they grow from one another and … they all come from the main trunk.*[31]

While Matthews and Okanicutt are debating, Robert McCormick is listening intently, and Darwin is asleep. It is McCormick who later tells Darwin about the mechanism for evolution, in which

> *Nature favours those whose variations … give them an advantage … Nature sometimes throws up an obstacle … with the result that animals that were once alike are separated and grow up to be different*.[32]

It is thus evident that whilst *The Darwin Conspiracy* subverts the way in which Darwin came about his theory of evolution, it remains faithful to his real-world conclusions as presented in *The Origin*. In this way, the novel functions to both entertain and educate the reader.

This Thing of Darkness does the same, adopting the widespread Victorian assumption that cultural evolution must be progressive. It seems that, within the text at least, English society is what all cultures must mirror in order to be considered 'civilised'. The *Hampshire Telegraph and Sussex Chronicle*, which FitzRoy reads, projects this view out to the public by writing that

> As soon as [the savages] are sufficiently acquainted with the language, and familiarized with the manners of this country, they will begin a course of education adapted to their future residence in their native country …. Captain FitzRoy hopes that … the condition of the savages … may be in some measure improved … at present they are the lowest of mankind.[33]

Although the term 'Social Darwinism' was only created post-*Origin*, here we see its impact. It is clear that the possibility for cultural adaptation is widely accepted, but the understanding of biological adaptation is in its infancy, as shown by FitzRoy's internal postulation that:

> Perhaps the exposure to cold, wet and wind, the long winters cocooned in their tents, had shortened the legs of the Fuegians and increased their body fat. Perhaps the Patagonians, like the Swahili tribesmen of Africa, had grown tall and wiry because of the fine climate, the flat terrain and the enormous distances they had to cover in following the herds.[34]

This prompts him to ask himself: 'Was it really possible that humans, originally cut from the same divine template, had adapted into a score of different varieties at the behest of the climate and of their surroundings?'.[35] Such thoughts were kept to himself at this point, as they contradicted the immutability of species as implied in the Bible.

The Bible is outwardly supported by FitzRoy soon after these musings, when he chastises Mr King for pointing a weapon at the 'savages'.[36] FitzRoy warns that 'They are not animals, put on God's earth for our sport!'[37] This statement conforms to the idea of the assumed superiority of humanity as suggested in the Bible. FitzRoy thus may be leaning towards the equality of "races", but certainly not the equality of species. King is not even convinced of the former, retorting 'but they ain't human, sir'.[38] It is here that biological adaptation gets some serious support, as FitzRoy acknowledges that the Fuegians

> do not look like us because their physiognomy has adapted itself to the cold and rain. Were I to cast you ashore, Mr King, and were the good Lord to take pity on your soul and spare your life, then within a generation or two your progeny would very likely be short, plump and jabbering away like the lowliest Fuegian.[39]

By prophesising what would happen to King under the same conditions, FitzRoy is showing that he has an understanding of the need to adapt, and the process of

inheriting adaptations before Darwin has published *The Origin*.

The internal physiology of the Fuegians proves to be adapted to 'the harsh climate' and their 'mode of life', as Wilson discovers when he conducts a post-mortem on a Fuegian. He finds that there is 'a thick fatty layer of insulation below the skin, closer to that of a seal than a human being'.[40] This 'subcutaneous layer, and the distinctively top-heavy body structure of the Fuegians' leads both Wilson and FitzRoy to conclude that they are indeed adaptations.[41]

FitzRoy's belief in adaptation does not extend to his belief in evolution from common ancestors. He explains to Darwin that

> Every animal varies more or less, in outward form and appearance, from its fellows that habit different surroundings. But to fancy that every kind of mouse which differs externally from the mouse of another country is a distinct species is to me as difficult to believe as that every variety of the human race is a distinct species. A mouse is a mouse. A human is a human, be he an Englishman or a Fuegian … A monkey cannot transmute into a human.[42]

This quote is also another example of FitzRoy's avocation for racial equality. His belief in adaptation is echoed by Mr Low, master of sealing-schooner the *Unicorn*, who has witnessed adaptations first-hand. Low claims to have seen 'quite normal-sized' cattle species grow 'grotesquely large', as Darwin puts it. Low says:

> wild horses, they've shrunk … the foxes [are] smaller and redder in West Falkland than in the east. And the Fuegian fox is smaller still. But they're all of them twice the size of a British fox.[43]

Darwin considers these rapid changes to be 'quite impossible' at this point in the text.[44]

Several examples of adaptation in *This Thing of Darkness* mirror those in *The Darwin Conspiracy*, so I shall draw upon the most apt of these. In *This Thing of Darkness*, Darwin and Bynoe are observing finch behaviour, when Darwin notices that the finches which they

> took on Charles [Island] had short beaks, thick at the base like a bullfinch. They were using them to squeeze berries and break seeds. But these birds have fine beaks, like a warbler. [45]

Bynoe then observes that one finch 'is using a twig like a tool. He appears to be trying to extricate something from the crevice of the trunk – an insect, or a grub'.[46] Darwin's explanation for such differences in morphology and behaviour is that

> each created thing is adapted to the place for which it was intended. One single species has been taken by the Lord and modified into a number of different varieties, for a number of different ends.[47]

This statement is an example of how Darwin reconciled science and religion, as he credits a creator for such modifications.

McCormick is sceptical of the idea of transmutation, remarking that Lamarck's work does not belong on FitzRoy's bookshelf, because it talks of '[b]easts evolving into men … the most atrocious revolutionary principles and the most dangerous Godless doctrines'.[48] FitzRoy shares McCormick's reservations, declaring that transmutation is 'a damnable reduction of beauty and intelligence, of strength and purpose, of honour and aspiration. It reduces mankind to a casual aggregation of inert manner.'[49] It is clear that both McCormick and FitzRoy assume mankind's superiority over all other species, but FitzRoy possesses Lamarck's work because he is originally of the opinion that 'science and religion should have been one and the same, the former merely a means to interpret the

full majesty of the latter'.[50] Whilst Darwin's character simply mirrors the opinions of his namesake prior to writing the *Origin*, McCormick's character represents the members of real-world Victorian societies who saw science and religion as irreconcilable. To FitzRoy, the rift between science and religion comes about post-*Origin*, because 'Darwin had set science against religion, had even gone so far as to postulate a Godless world'.[51] It is clear that *The Origin* has been controversial from the outset, not just upsetting FitzRoy but also wider English society which 'had been in uproar since the publication'.[52] To further demonstrate the impact of *The Origin,* an entire chapter of the novel is dedicated to the real-world Oxford debate.[53]

Unlike the other texts discussed in this chapter, *This Thing of Darkness* directly addresses artificial selection, or selective breeding. It also shows how this process was used by Darwin in order to demonstrate the process of natural selection. Previously discussed in relation to Social Darwinism, the process of educating 'carefully selected savages' is an example of artificial selection, with the hope of producing 'improved' members of the race over generations.[54] Whilst, in this instance, the most promising individuals (by Despard's standards) are being selected, Darwin believes that, in general

> civilized men do our utmost to check the natural process of elimination. We build asylums for the imbecile, we treat the sick, we institute poor laws. Vaccination has preserved thousands who would formerly have succumbed to smallpox. Thus the weak members of civilized societies propagate their kind.[55]

In this way, Darwin is saying that humans constantly intervene with natural selection.

The concept of 'usurp[ing] the role of the creator' horrifies FitzRoy, as he

is still opposed to transmutation, and still of the belief that mankind is a special creation. Darwin attempts to explain to FitzRoy that humans are merely animals, by telling him that

> the design of man is far from perfect. We must rest for eight hours a day. We must feed ourselves three times a day. We eat and breathe through the same orifice. We fall prey to every illness. We are not so wonderfully designed.[56]

This insistence that humans are merely animals again brings to light specious entanglement, a concept which is embraced within *The Naturalist* by the Māori kaumātua, Kupe, who tells Ernst of his belief that 'the world was locked together — the krill was bound to the founding of New Zealand and the whales were bound to the krill and now the Pākeha whalers were bound to the whales'.[57] This mirrors Darwin's idea of the entangled bank, and just like in *The Darwin Conspiracy* it suggests that the tribes which were perceived as 'savage' had a rich understanding of the workings of nature.

The early intermarriages between the 'savage' Māori and the whalers pave the way for cultural evolution. Ernst prophesises that 'over time this joining might give rise to an authentically new people, social codes and conventions that the world had never before seen, the contemporary creation of new cultures'.[58] This concept comes as an epiphany for Ernst, who 'had always thought of the customs of a people as belonging to their race alone'.[59] In this way, the gradual dawn of understanding in the real-world Victorian society is replicated in miniature. This epiphany also shows that Darwin's ideas become more easily accepted when proof is provided.

Within the text, the idea that "races" are distinct, and unable to blend, seems to be a crucial element in the racist belief in fixed hierarchies. I say this

because Ernst applies the *Scala Naturae* to "races" when he is contemplating marrying the Māori woman Hariata. He has a desire to see intermarriage between "races", and the blending of cultures, but muses that, in 'civilised' societies such as England and Germany '[t]o revolt against injustice might be tolerated, but to threaten the hierarchy of the races which formed the backbone of civilisation, this was a crime of another calibre'.[60] This is an example of widespread Social Darwinism, simply defined as 'racism' pre-*Origin*, affecting the progression of equality and cultural evolution.

One of the issues about cultural evolution within the novel is that it is measured by 'progress', or the invention of new technologies. This is evidenced by Friedrich's comment to Ernst that

> the perfected world you seek … *does* exist, and it lies with the steam engine, with electro-magnetic energy and the microscopic lens … Even in a hundred years, [New Zealand] is likely to be ... locked in the past.[61]

In a Darwinian sense cultural evolution should, of course, not be seen as progressive. Like biological evolution, it should be measured by changes. For cultures, these changes may include composition, social structure, traditions, and so on.

The meditations on evolution and natural selection in these neo-Victorian novels have a dual function. On the one hand, they are clearly designed to plunge the reader back into the nineteenth-century scientific ferment of discovery and debate. On the other hand, each author is clearly alert to the way in which ideas have morphed since Darwin published the *Origin*. These texts all illustrate Bormann's argument that neo-Victorian narratives are '*in dialogue with a Victorian past*'. They reflect a contemporary determination to show respect for non-European traditions, with *The Naturalist* and *The Darwin Conspiracy*

highlighting that cultural and intellectual understandings of adaptation were part of Māori and Fuegian worldviews. Several of these narratives are also imbued with a modern sense of the interconnectedness of all ideas, carefully tracing the many influences on Darwin, and insisting that he was part of a scientific community all undergoing a radical reassessment of thought.

History of Humanity

'*History is not by definition a process of improvement*'.[62]

In contrast to the preoccupation with evolution and selection in all of the neo-Victorian texts under discussion, the history of humanity does not feature as strongly. Indeed, there is no mention of it in either *Morpho Eugenia* or *The Naturalist*, whilst *The Darwin Conspiracy* touches very briefly on the topic. *The French Lieutenant's Woman* contains one instance in which it is discussed. The narrator launches an attack of sorts on the book of Genesis, calling the origin story a 'myth, invented by Archbishop Ussher in the seventeenth century'.[63] He then says that Lyell, 'the father of modern geology', has 'hurled' the age of the earth 'back millions' of years.[64] Whilst this single statement may be brief, it showcases the tensions between science and religion in relation to humanity's pre-history. The dearth of recent literary discussion of the history of humanity is perhaps due to the fact that Darwin's views on the subject have now become widely accepted 'to the point that many who have never actually read any evolutionary theory take the basic idea for granted'.[65] However, not all authors follow this pattern. *This Thing of Darkness* explores the idea in more depth. Charting, as it does, Darwin's voyage on the *Beagle*, the discovery of fossils and Darwin's gradual reassessment of the age of the earth are fundamental to this narrative.

In *The Darwin Conspiracy,* Darwin tells FitzRoy that 'the world … has

travelled through successive stages, each with its own distinctive flora and fauna'.[66] FitzRoy takes this to mean that Darwin does 'not subscribe to the belief in Mr. Paley's Watch-maker', but Darwin explains that he has 'read *Natural Theology* on three occasions', and does 'believe in the Watch-maker'. He says that 'It's merely the newness of the watch which I find open to question'.[67] Such conversations highlight 'Darwin's ability to think in eons — not centuries or millennia but entire epochs. He elongated time, stretched it out, examined cataclysmic events as if in slow motion'.[68] It is this ability which Hugh finds fascinating, in part because it went against the grain of conventional Victorian beliefs regarding human pre-history, and the origins of life. Okanicutt does the same. Due to the aforementioned observations that they have made in regards to adaptations and evolution, he explains that his people '*do not believe that a god made the plants and the animals. Or that he made man and … woman*'.[69]

Paley's idea of a creator is 'irresistible' to the Darwin in *This Thing of Darkness*.[70] Part of its appeal comes from the widespread opinion, in this instance expressed by McCormick, that 'to suggest that man is just another creature crawling out of the slime, well, it's a beastly and damnable creed'. Such a statement comes about as he is reading the 'bosh' poetry of Erasmus Darwin. [71]

Tangible evidence for the gradual development of earth's creatures comes about with the discovery of several Megatherii fossils at Punta Alta.[72] Darwin's explanations of their deaths (that they drowned despite being found 'fifteen feet above the high-water mark') prompts an argument between FitzRoy and Darwin as to whether they fell victim to the biblical flood, or whether the earth had undergone natural geological changes. Darwin does 'not seek to undermine the book of Genesis', but

there are contradictions therein, anomalies, passages that could be

> interpreted figuratively. For instance, the lower one geologizes into the rock, the earlier the strata, the simpler the life-forms one finds … Does this not suggest to you an older earth than the one which was created in seven days? [73]

Their argument continues over several pages of the novel, with both of them coming to the sobering conclusion that Darwin is 'no longer inwardly moved by the Holy Spirit'.[74] This, of course, mirrors Darwin's real-world departure from his belief in the Bible as a divine revelation. FitzRoy's faith in the Bible is also affected by these discussions, as demonstrated when he agonises over the fact that 'man might be more insignificant than he had ever realized'. He asks himself whether 'the world [was] really aeons old, as Lyell was now suggesting'.[75] FitzRoy is representing the real-world anxiety about the fact that if scientists such as Lyell and Darwin were correct, 'the science of geology … calls the Old Testament story into question'.[76] The Bible could thus potentially be viewed as a mere story, and all of the values and traditions therein could become moot.

Darwin's character knows that 'the whole edifice of Christianity must heave and shake before the remorselessness of his logic'. He muses that '*if I am right — then my findings will be crucial to the theory of the formation of the world*'. More evidence for the gradual geological formation of the earth is provided by local man Gonzales, who tells him that 'all the animals on the Chilean side are different from all the animals on the Mendoza side … condors … fly across … But the animals — they will not cross the passes. It is too cold'. Darwin thinks that this 'meant that the animals had come into being *after* the Andes had risen — and the Andes were still rising. So they could not, in fact, have been created by God on the sixth day.[77]

These 'two sets of animals' imply transmutation 'from original, common

ancestors'. Of course, this sees FitzRoy and Darwin have another argument about the history of life. FitzRoy is able to use the real-world gaps in the fossil record to support his argument, asserting that it 'does not convincingly document a single transmutation from one species to another. Where are the countless fossils of intermediate species?'. Darwin counters this by acknowledging that the 'fossil record is less than perfect', but it will become more complete, and more convincing, 'in future ages'.[78] He continues to think about 'the jumps in the fossil record', and considers that perhaps 'there was no more wonder in the extinction of an entire species than in that of an individual'.[79] He is utterly convinced that 'earth is hundreds of millions of years old, not merely a few thousand', because although many 'believe in the absolute truth of the Old Testament, the soil is bursting with fossils that have been geologically proven to be many millions of years old!'[80]

The geological record has indeed become more complete and thus more convincing over time, as Darwin's character predicted that it would. Yet such arguments about its validity still continue today. This is but one example of neo-Victorian fiction engaging in and critiquing contemporary issues.[81]

Aside from these discussions about the age of the earth, and what it means for the history of humanity, *This Thing of Darkness* also directly addresses the idea of animal ancestry. Pre-*Origin*, the narrator is of the opinion that 'British society … was ready for a carefully reasoned argument postulating man's descent from the higher apes', providing that it explained a 'convincing mechanism for transmutation'.[82] Robert Chambers' *Vestiges* failed to do so, and thus this comment foreshadows how Darwin would eventually fill the void, whether British society was indeed ready for it or not.

Evidence for the descent of man is reported in the *Daily Telegraph*, as a

'skull, apparently belonging to a primitive branch of the human species, had been unearthed in the Rhineland; Fuhrott [sic], its discoverer, had named it *Homo neanderthalis*'.[83] Discoveries such as this fuel Darwin's belief in evolution, and he explains to FitzRoy his idea that

> Life itself must have started by chance, too — in a warm pond, perhaps, galvanised by a bolt of lightning that fused random molecules together … Even man's vertebral skull, which contains our brains, is a sign of our descent from molluscal creatures with vertebrate but no head … We have animal ancestors.[84]

The now widely-held belief that humans have animal ancestors is used to explain the physiological and behavioural homologies between species.

The neo-Victorian novels that discuss the history of humanity follow Darwin's own journey of discovery on the subject. Focussing on the period of Darwin's career prior to his controversial publications means that the narratives are structured more around the stages of his intellectual revelations than the resulting anxieties that his theories unleashed, particularly after the publication of the *Descent of Man*. Writing as they do from a contemporary perspective, where Darwin's theories are readily accepted and do not induce such heightened anxieties, these authors place less emphasis on the reaction to Darwin's ideas than on his own internal journey.

Comparing Species

All organic beings are found to resemble each other in descending degrees.[85]

Four of the texts in this chapter, namely *The French Lieutenant's Woman*, *This Thing of Darkness*, *The Darwin Conspiracy*, and *The Naturalist* use analogies to represent Darwin's entangled bank, and specious differences. *Morpho Eugenia*, in

contrast, cautions against the use of analogies in general, and does not condone comparing humans to other animals. As with the earlier section on evolution, here the contemporary outlook of the neo-Victorian authors at times clashes with nineteenth-century viewpoints. There is clearly a contemporary unease at the potential for racial hierarchies to be constructed due to the appropriation of Darwin's biological theories into the realm of culture. At times these texts work to expose the racist attitudes of a past era, and even of Darwin himself. The inclusion of characters who challenge the assumptions of their day and the careful use of animal imagery to undercut the assumed superiority of Europeans, emerges from a post-colonial sensibility.

The French Lieutenant's Woman uses animal-human comparisons as a means of insulting the characters. This method of derision, in itself, implies a hierarchy of species, at the top of which sits humanity. The confrontational behaviour of Mrs Poultney and Lady Cotton is compared to a 'thunderous clash of two brontosauri'.[86] Mrs Poultney is later referred to as a 'wild animal', and an 'Early Cretaceous Lady'.[87] Sarah describes the French Lieutenant as being 'like the lizard that changes colour with its surroundings', because his behaviour changes depending on who he is accompanied by.[88] The portrayal of two ladies as large, cumbersome, 'angry' prehistoric creatures can be interpreted as an insult to their physical appearance and age, and Sarah means to insult the French Lieutenant's character, as she feels that he is insincere in his gentlemanliness. These comparisons do, however, also highlight how humans can mirror other animals in their appearance and behaviour.

This hierarchical view of animal life sees Smithson assert that 'he was not a moth infatuated with a candle; he was a highly intelligent being, one of the fittest, and endowed with a total free will'.[89] As with the rest of the texts in this

chapter, the hierarchy extends to the "races". Nevertheless, Sam muses that sometimes the Other is endowed 'with an exciting, beautiful strangeness', and he is of the opinion that the "races" may be united if 'we … communicate more and more'.[90] Smithson goes on to comment that the working class, whilst viewed as 'primeval', have a 'pleasant lack of social pretension' and are just 'simple people setting about their day's work'.[91]

Such epiphanies regarding racial equality are mirrored in those concerning species equality, such as when Smithson 'saw that all life was parallel: that evolution was not vertical, ascending to a perfection, but horizontal'.[92] This is a pivotal revelation, which highlights Darwin's impact on the way in which historical Victorians viewed the world.

Darwin's entangled bank is analogously portrayed in *The French Lieutenant's Woman*. Smithson sees the entangled bank clearly when a 'fox crossed his path …. a roe-deer looked up from its browsing', and he has

> all his arrogance dowsed by a sudden drench of nature's profoundest secret: the universal parity of existence …. The trees were dense with singing birds … each small bird, each song it uttered, came from a perfect world.[93]

Each 'perfect world' is the niche to which individual species are adapted, and the 'parity of existence' describes the way in which each of these species interacts with those around it, so that they each become a necessary part of the wider ecosystem. Smithson has moved from viewing evolution as vertical to horizontal, and now in a Darwinian way, as an entangled, branching tree.

Analogies to Darwin's entangled bank mirror the way in which he himself used analogy to prove natural selection. I too am relying on analogy in order to display the biological connection between humans and animals. Smithson argues

that people ‘may argue anything at all by analogy … and so consequently nothing’.[94] After the aforementioned discussion on humans learning from ant behaviour, Adamson remarks that ‘Analogy is a slippery tool … Men are not ants’.[95] In this way, two characters, the first of whom is strongly pro-Darwin, argue against the validity of proof via analogy. Whilst Smithson is doing so in order to suggest the absence of God, who humans ‘have made … by specious analogy’, he is also arguing against the validity of Darwin’s methods.

Darwin uses analogies and comparisons to demonstrate the connectivity of species, all of which he believes to possess their own form of ‘intelligence’. An actual quote from Darwin is repeated in *The Darwin Conspiracy* , when his character appears to doubt the applicability of his theories to the “races”. It reads: ‘I could not have imagined how wide was the difference between savage and civilized man’.[96] This shows his real-world stance on the supposed racial divide, and it is an example of how he was a product of his time in terms of racism. *The Darwin Conspiracy* is heavily concerned with racism, and the way in which the social hierarchy mirrors that of the supposed species hierarchy. Darwin’s character thinks that Jemmy ‘treated Fuegia Basket as if she belonged to a lower animal order’.[97] This is particularly significant in that Jemmy and Fuegia are both Fuegian natives. Upon beholding another tribe of Fuegians on the shore, Jemmy proclaims that they ‘are not men. They are beasts ….. big monkeys. Fools!’.[98]

It is the influence of British civilisation which has caused Jemmy to regard even his own countrymen as ‘lower’ than himself. As mentioned, Darwin assigns such a hierarchy to the “races” himself. He later ponders whether he could ‘take any reasonably endowed savage by the hand and teach him like a child’, and assumes that even a promising savage such as Jemmy could ‘never rise to the level of a twelve-year-old English lad’.[99] In Darwin’s mind, the Fuegians are

uneducable, and thus he appears to abandon any effort to teach them, finding 'it quaint that the savage entertained the notion that science could unite them', and concealing 'his amusement at the idea of sitting with a council of naked brown-skinned men to discuss higher realms of knowledge'.[100] Lizzie later tells of how Darwin described the natives as 'slobbering … wild animals'.[101] As in *The Darwin Conspiracy*, Darwin's character recites the real-world quote that he 'could scarcely have believed how wide was the difference between a savage and a civilized man'.[102]

To Darwin's credit, his abhorrence of slavery is highlighted when his character in *The Darwin Conspiracy* 'came upon sights' in South America 'that made him feel he had blundered into a hell far worse than anything he had experienced on the ship: slaves from Africa … being worked without mercy … under the lash of a whip'. This causes him 'dismay', because he thinks that 'Beasts of burden are treated better than this'.[103] To further demonstrate Darwin's views on slavery, McCormick mentions the historical Wedgwood plate from which Wells and Kingsley quote in *The Island of Dr Moreau*, and *Water Babies* respectively. This plate features 'the little Negro boy in chains on bended knee under the words: 'Am I Not a Man and a Brother?'.[104]

The juxtaposition of Darwin's racist attitudes with his righteous anti-slavery stance seems somewhat of a disjunction, and this has been the subject of much debate among real-world contemporary Darwin scholars. Some, including anthropologist Marvin Harris, see him as a social evolutionist. Their concern stems from 'the tendency of biologists to make Darwin into a patron saint unblemished by any fault of mind or character', despite the myriad remarks in the *Origin* which are widely perceived as being '"racist"'.[105] On the one hand, Darwin implies that 'a struggle for existence' is an ongoing force which should not be

lessened by cultural practices. He also, however, 'seems to recognize the role of … social institutions generally in social evolution', and he therefore 'seems to contradict himself, leaving scholars free to draw whatever conclusions fit best with their preconceived ideas about Darwin and his role in Western thought'.[106] The fact that '"what we call "social Darwinism" — the belief that competition between … nations and races has been an important, if not the chief, engine of progress in human history"' was 'endemic' in Britain pre-*Origin* suggests that Darwin's 'racist' remarks were a product of his time. Couple this with the fact that he 'did little, if any, original research on social evolution'. This was because he was only attempting to 'illustrate the applicability of … natural selection to the case of man', much in the same way that he used selective breeding of pigeons in order to demonstrate natural selection in animals.[107] Whatever the case may be, Darwin's ambiguous and contradictory stance on social evolution continues to cause anxiety and arouse debate in the twenty-first century. It is thus a subject touched upon in some neo-Victorian literature.

Darnton's fictional Darwin does, however, have eye-opening encounters after which he is forced to think about his racist views. He says that 'Jemmy's way of reasoning seemed so opaque, so alien, so far removed from normal categories of space and time, cause and effect'. Nevertheless, when he sees marine iguanas which, on the surface looked 'hideously … like malevolent dragons, but [they] were in reality sluggish and harmless', he is enlightened about the misconceptions one can have about the 'Other'.[108] By witnessing rituals of giant tortoises, he feels that the 'beasts had shed their savage masks and revealed their innocent natures'.[109] Charles can see how ignorance causes fear, and making an effort to understand the ways of the 'Other' can lead to understanding and acceptance. In this way his heroic stature is consolidated for the late twentieth and

early twenty-first century reader.

Wakefield's expectations are surpassed by New Zealanders in *This Thing of Darkness.* He explains that they 'are not savages, properly speaking … but a people capable of civilization'.[110] By seeing this potential in a dark-skinned people, Wakefield is clashing in opinion with Darwin's character, who holds the view that 'the black man' has 'reasoning powers' which 'are only partly developed' and thus 'closer to the higher apes than the white man'. He goes so far to say that 'brown children look less like human beings than I could have fancied any degradation might have produced'.[111] Kempe and Wilson also differ in their opinions of dark-skinned people: Kempe declares that they are 'a different species'; Wilson argues that 'they are the same'.[112] FitzRoy, meanwhile is itching to '*help to prove that all men are of one blood'* because he can foresee '*what a difference it would make*' to the relationships between "races".[113]

The nods to racial equality are very much overshadowed by the incessant racism which dominates the novel. Dark-skinned people are often referred to in animalistic terms meant as insults. Even FitzRoy, who advocates racial equality, describes a Patagonian horseman as exuding 'a deep, pungent animal smell'.[114] In addition, he regards the Fuegians as 'more like porpoises than men', and 'like a satire on humanity'.[115] One particular Fuegian is described by FitzRoy as having 'flat and rotten' teeth, 'like those of a badly tended horse', and is on the whole 'like no other creature, man or beast, that FitzRoy had ever seen'.[116]

Recall that Darwin's character is of the opinion that dark-skinned "races" are ape-like. In relation to the Fuegians specifically, he says that they resemble 'nothing so much as an orang-utan taking tea at the zoological gardens'.[117] He also describes them as 'primitive … stupid, filthy, godless *savages*', who behaved like 'a pack of hounds'.[118] The 'aboriginal warriors' in Australia are described in

similar terms, as Darwin considers them ‘to be among the very lowest of barbarians’.[119]

FitzRoy’s comparisons in New Zealand are similar, as he notices that ‘each tooth’ of the New Zealander is ‘identical to its neighbours like those of a ruminant animal, quite unlike the wolfish selection that filled a white man’s mouth’.[120] The narrator describes ‘Hone Heke’s small dark eyes’ on ‘FitzRoy for a moment, like a hawk sizing up its prey’.[121] Later, when Hone Heke is charged with ‘damaging crown property’ there is ‘a price on the chief’s head’. This prompts Hone Heke to write to FitzRoy asking ‘[a]m I a pig that I am thus to be bought and sold?’. Hone Heke threatens to kill any ‘whites remaining after two days’, but Wakefield is confident that Hone Heke, and the rest of the New Zealand ‘savages shall be crushed like wasps in the iron gauntlet of civilization’.[122]

Similes between humans and animals are often used in order to describe Englishmen in *This Thing of Darkness.* Missionary Charlie Wilson is said to possess ‘massive brawny forearms, furred like a chimpanzee’s’, and fellow missionary Allen Gardener is described as having ‘exuded the enthusiasm of an Alsatian dog. Talking to him was like being licked’.[123] In addition, Lord Londonderry’s ‘owlish gaze’ makes ‘FitzRoy feel ‘like a mouse’, and William Sheppard is said to behave ‘like a wasp’ in that ‘he is extremely hard to avoid’.[124] Whilst in England, FitzRoy feels ‘like a worker ant’, caught up in the ‘stream of back-clad, black-booted, black-hatted men’, and reflects that ‘men had dressed like hummingbirds’ in his youth.[125] He also describes Reverend Despard as being ‘perched like a vulture’, and having ‘bared his teeth exultantly, like a large carnivorous rodent’.[126]

By comparing both ‘savages’ and Englishmen to animals, the novel is

actually showcasing the way in which all of humanity share commonalities with one another, and with the wider animal kingdom, though many of the comparisons must be read as intended insults to the characters. Darwin advocates specious commonalities when he reaches 'the inescapable conclusion that we are merely animals … human and animal consciousness are not so dissimilar. Is our smile not our snarl? Are we so far from … the chimpanzee?'[127]

The similarities between all cultures are addressed several times, and on one occasion, FitzRoy goes as far as to suggest that 'the modern civilization to which he had brought the Fuegians appeared even more desperate than their own'.[128] Fanny Rice-Trevor sees a cultural commonality between Fuegians and Englishmen when 'Boat died', and 'the other three blackened their faces with a mixture of grease and charcoal from the grate'. She recognises that Englishmen also 'mourn the death of a loved one by dressing in black', and concludes that 'they are not so very different from ourselves'.[129]

In *The Naturalist,* Ernst categorises racial Othering as 'European arrogance'. One example provided of this is a real-world quote from Darwin's *Voyage of the Beagle*, in which Darwin compares 'the New Zealander … to the Tahitian', and concludes that the New Zealander 'is a savage', and the Tahitian is 'a civilised man'.[130] Ernst thinks that this comparison is unfair due to the fact that Darwin was only in contact with New Zealanders for nine or ten days, whilst he was in Tahiti for forty-five days.[131] From Ernst's point of view, the more exposure one has to a particular culture, the more likely they are to understand and accept it. Chief Rangihaeata believes that simply listening to one another will bring understanding. He asks why Jerningham 'cannot hear', and likens him to 'a fish out of water', perhaps because he is a European man stepping into a Māori world, attempting to understand that world through his own cultural lens. Only if he

'grows ears', or adopts a self-reflective cultural perspective 'will he survive'.[132] In his talk to the Royal Society, Ernst articulates both his own and Rangihaeata's views, stating that

> *if we have traced Humanity through all the forms ... of social existence, and have found that in each state there is something recommendable, then, and not until then, shall we treat with consideration those who differ from us.*[133]

He acknowledges that between Europeans and Māori, there 'are many differences', but says that, upon closer inspection, 'we are more alike than I had ever imagined'.[134]

The Naturalist is shaped by a very contemporary, post-colonial viewpoint. It is focussed on racial comparisons, and it uses Ernst to advocate racial equality throughout. He is at odds with Darwin, who writes in his *Researches* that he does '*not believe it possible to describe ... the difference between savage and civilised man*'. While in New Zealand, Ernst 'sought this *difference between savage and civilised man*', and says that 'the essential differences' between the Māori and the Europeans 'did not render us essentially separate. On the contrary, what impressed me…were the similarities'.[135] He believes that 'there was no scientific evidence whatsoever indicating that the so-called primitive brain differed in any way from the civilised one'.[136]

The narrator comments on Darwin's view of a racial hierarchy when he observes that aboard the *Tory* 'Nahiti was incompatible with the ship's hierarchy' due to the fact that he was dressed 'in a gentlemen's clothes and wearing a moko on his face'.[137]

Nahiti's duplicity foreshadows the way in which Māori and European cultures will eventually come to mix. Ernst is in favour of such a cultural union,

and slams the notion of a racial hierarchy in his *Travels*, declaring that

> *man … is the same, whatsoever the colour of his skin … differences … are due to mere circumstances*.[138]

This implies that the ways of one society have their equivalent in any another. Ernst brings this to light when he muses that in 'London… top hats and the epaulettes on a footman's shoulders … made a man. In New Zealand, it was huia feathers and muskets…where was the difference?'.[139] Ernst thoughts link back to the idea that every living thing has its double, as previously demonstrated in novels such as *Moreau, Water Babies, Lost World, Dracula, Jekyll and Hyde*, and *This Thing of Darkness.*

All of the novels in this chapter challenge the racism of Darwin's imperial world to some degree. In doing so, these texts also highlight the idea of species connectivity. This approach reflects the double nature of neo-Victorian texts, as it refracts the past through a contemporary, post-colonial lens.

Struggle for Existence

Many more individuals of each species are born than can possibly survive … consequently, there is a frequently recurring struggle for existence.[140]

Perhaps unsurprisingly, given the historical and biographical nature of the neo-Victorian depictions of Darwin, the struggle for existence is a central theme in this fiction. Such a theory remains relevant in the twenty-first century, as it is inevitable and ongoing. The texts in this chapter thus treat the struggle for existence seriously, devoting much time to exploring both the physical and mental struggles of characters. *The French Lieutenant's Woman* focusses on the Double, and the internal struggles associated with this phenomenon. *Morpho Eugenia* also deals with internal struggle, and touches on physical struggle in relation to ants. *The Naturalist* is centred on the tensions between the coloniser and the colonised,

whilst *This Thing of Darkness* contains by far the most examples of the struggle for existence, partly owing to its length. For this reason, I shall draw only upon the most apposite examples within the text.

Recall the description of the French Lieutenant as a 'lizard that changes colour with its surroundings'.[141] The narrator explains that this is a cultural survival tactic, analogous to the biological adaptation of '*cryptic coloration'*, which is 'Darwin's phrase' for 'survival by learning to blend with one's surroundings'.[142] To reap the most benefits from his different cultural environments, the French Lieutenant 'had to change to survive'. His ability to do so shows that humans have 'a very special privilege in the struggle to adapt', owing to a 'choice of methods' not limited to the realm of biology.[143]

The French Lieutenant's Woman also deals with internal, or moral, struggles within characters. The narrator critiques the Victorian tendency to 'mercilessly imprison all natural sexual instinct' in young women when twenty-year-old Ernestina is 'racked by sobs' as Charles 'drew her to him'.[144] Similarly, the narrator comments on how, nowadays, people 'are no sooner in any but the most casual contact than they consider the possibility of a physical relationship'. He goes on to say that modern society sees

> such frankness about the real drives of human behaviour as healthy, but in Charles's time private minds did not admit the desires banned by the public mind; and when the consciousness was sprung on by these lurking tigers it was ludicrously unprepared.[145]

Moral struggles relating to sexual behaviour were evidently rife in Victorian times if we are to believe the narrator on this point. Such struggles still permeate modern societies, which are built on the practice of monogamy, but certainly not nearly to the same extent when considering sexual behaviour outside of marriage.

In this way, *The French Lieutenant's Woman* reflects the differing attitudes about sexual behaviour between nineteenth-century Britain, and contemporary societies.

These struggles show that 'every Victorian had two minds', which links back to the idea of the Double. The Victorian Double is described by the narrator as being 'a schizophrenia', in the form of 'ubiquitous neuroses and psychosomatic illnesses', such as those seen in 'the poets', and some 'intellectuals' of the time. When studying the nineteenth century, the narrator is of the opinion that the idea of the Double is 'the one piece of equipment that we must always take with us'.[146] By heeding this advice researchers of the nineteenth century will be alert to the internal struggles plaguing so many educated Victorian people with respect to science and its implications for humanity. Such an awareness allows for both a deeper analysis of historical figures, and a framework for creating convincing, complex characters who are realistically embedded in the nineteenth century context.

Morpho Eugenia touches on the Double concept, and the sense of the Uncanny, when Adamson muses that

> he was doomed to a kind of double consciousness. Everything he experienced brought up its contrary image from *out there*, which had the effect of making not only the Amazon ceremonies, but the English sermon, seem strange, unreal, of an uncertain nature.[147]

Aside from struggles within characters, there is one example of the physical struggle for existence in ants. Adamson explains to Maddy Compton that the red sanguinea ants 'invade the nests of the Wood Ants, and steal their cocoons, which they rear with their own, so that they become sanguinea workers. Terrible battles are fought by raiders and defenders'. Compton sees an analogy in this, remarking that the ants 'resemble human societies in that, as in many things'. This is a nod to

homology, and to Darwin's concept of specious entanglement, as well as another critique on humanity, like that concerning the Amazon ants, and their utter dependence on slaves.[148]

Recall that the Amazon ants are so well adapted for one purpose that they are at a disadvantage in other respects. A similar thing happens with the smallest '*fortis*' finches Hugh is studying in *The Darwin Conspiracy*, because '[t]heir beaks are too tiny. They can't handle the *Tribulus*. You see them trying—they pick it up and turn it around and then drop it'. In this instance, the *fortis* are well adapted for eating smaller varieties of seeds, but a drought on the island means that 'Seeds are in short supply', and thus the adaptation of a smaller beak becomes disadvantageous. As discussed earlier, all species have adaptations to their discrete environments which can be rendered useless or detrimental if conditions change. The drought in *The Darwin Conspiracy* means that several 'chicks have died in their nests' due to their parents' inability to carry the larger seeds.

Despite this drop in finch numbers, the fittest finches, 'the ones with the deepest beaks', should survive to produce 'the next generation'. Thus, over time, depending on environmental conditions, another 'multitude with narrow beaks' may be born, and so on.[149] Survival of the fittest is explained by Lizzie Darwin when she is writing of the similarities in the theories of Wallace and her father. Both are '*influenced by the work of Thomas Malthus*' and thus they

> *conjectured that disease, war and famine hold a population in check and of necessity improve the race because in every generation the inferior would inevitably be killed off and the superior would remain*.[150]

Darwin writes in *The Origin* that, in a biological sense, '[t]here is no exception to the rule' of survival of the fittest.[151] Novels such as *The French Lieutenant's Woman* demonstrate that this rule also applies in a cultural context. Lizzie

Darwin's character in *The Darwin Conspiracy*, writes of Wallace seeming as though he has '*not ... fully adapted to the English society after eight years wandering among the savages of the Moluccas and Papua New Guinea*'.[152] Aside from displaying the inherent racism of the era, this quote reflects the Darwinian stance that, like Hugh's finches for example, an individual may be sufficiently adapted to one discrete environment and thus struggle in others. To Etty, it is Wallace's tendency to be '*vulgar in his manners*' that puts him at a disadvantage in her environment. Nevertheless Lizzie thinks that he will quickly adapt (like Fowles's French Lieutenant) as she '*cannot dispel the notion that he is as swift and cunning as one of his emblematic species that would prevail through sheer instinct to survive*'.[153]

The universal survival instinct is further demonstrated in a cultural context when McCormick feels that his position aboard the *Beagle* is in jeopardy. He accosts Darwin regarding his interactions with FitzRoy, and expresses his jealousy at the fact that he gets to 'dine with the man. You read in his cabin. You accompany him on expeditions. How can you possibly expect me to compete under such circumstances?'. Darwin responds that he 'had not realized we were in competition,' but they most certainly are. [154]

Both of the *Beagle*'s captains go through internal struggles. The first captain, according to Henslow, 'had blown his brains out … off the Godforsaken coast of Tierra del Fuego', leaving a message in the ship's log reading 'the soul of a man dies in him'.[155] FitzRoy also commits suicide, an action which is partially induced by the '*misery*' of keeping Darwin's fictional secret: That he had let McCormick die.[156] Additionally, FitzRoy is said to have suffered from '*the blue evils'*, due to events such as the '*massacre in Tierra del Fuego*'.[157]

The Naturalist is primarily centred on the struggles affecting Ernst

Dieffenbach and the New Zealanders. Nahiti utters an apt phrase at the expense of Ernst when he says '*there are always weaklings*'.[158] Although this is said in jest, it is true from a Darwinian point of view. Nahiti and Ernst share the bond of being two expats aboard the *Beagle*, from New Zealand and Germany, respectively. In Nahiti's view, they 'are two fishes who went out for a swim'. When the *Beagle* reaches New Zealand, Nahiti will 'be tossed back into [his] home waters'. He tells Ernst to 'see if I swim or am eaten by sharks'.[159] His fear is that his tribe will punish him for pretending to be a Māori king, or that they will refuse to welcome him back after his cooperative journey with the colonisers. Nahiti does not feel that he belongs with his tribe, or that he belongs aboard the *Beagle*. Instead of sleeping in a cabin, he prefers to sleep in the ''tween decks', which are 'dark', and 'foul smelling'.[160]

It is here that Ernst encounters an example of the struggle for existence in that 'a creature waddled into the circle of light. It was the sow, heavy with piglets. Somehow she had managed not only to survive but to grow new life during their exhibition'.[161] By sharing sleeping quarters with this pig, a 'lower' creature, widely associated with filth, Ernst is reflecting how his people are seen by the Englishmen. The imagery of the pig walking from the darkness into the light, coupled with its ability to survive and reproduce in such suboptimal conditions, represents the way in which Nahiti has the potential to do the same. In order for Nahiti to survive his journey, however, he must rely on the pretence of his royal status, and the false promise of convincing his people to welcome the English settlers. He knows that, in reality, there will be much resistance against colonisation. To survive, he must lead the colonisers to his tribe, and Ernst prophesises that it will play heavily on Nahiti's '*heart to convey the wolf to the rabbit's warren*'.[162] Nahiti's survival thus rests on his ability to betray his own

culture.

For Ernst, it his own morality which he is expected to betray. The chief of Taua presents Ernst with a female Māori slave, with whom he is expected to copulate 'to avoid offence'. The act of doing so could cause 'a stain on his reputation', but more importantly, it would go against his ongoing 'fight for the freedom of Mankind'. His internal struggle is thus primarily between Hariata's 'beauty and her plight as a slave'. The narrator explains that 'Ernst did not move' toward Hariata, despite 'his own desire' to be with her.[163] This showcases Ernst's Double consciousness, which becomes more Stevensonian when the 'body in which Ernst lived had taken hold of him … a rough stranger … almost on its own it began to crawl toward the mat where Hariata was lying'.[164] In addition, when Ernst explains his struggle to Hariata, assuring her that there 'is no question of what I want', his 'voice might have belonged to another man'.[165]

> A letter to Ernst from Charles Heaphy details that the Māori
> *are ever a thorn in the side of the upstanding settler. Surveying pegs are pulled from the ground, shelters burnt and Arthur Wakefield's men … were disarmed, and then … Rangihaeata exercised his 'right' of utu for the slaying of his wife by killing* [them].[166]

This kind of conflict is said to be inevitable if any culture is to be 'exposed to civilisation', and the consequences depend entirely on 'how Mankind … learned to tolerate the distinctions between him and His brother'.[167]

Ernst, Tangutu, and Black Lee voluntarily place themselves in a position of struggle when they attempt to ascend Taranaki, a tapu mountain upon which 'the ngārara', or 'monster' awaits all climbers.[168] There comes a time during this journey where all of the men 'had not eaten for the whole of that day and half of the previous one', and they have 'feet bloodied with blisters, muscles sore …

insides churning'.[169] After aborting their ascent, they are thankful to find 'a small, collapsing storehouse', where 'they feasted on mouldy kumara and fern root'.[170]

Despite their unsuccessful attempt to scale Taranaki, Ernst is adamant that he 'cannot abandon the ascent', so his party sets out again, with three extra men; 'Te Kake, one of his slaves', and Worser Heberley. They have learned valuable lessons from their first attempt, in which 'it had taken a week to reach the island in the Waiwakaio River'. The second time around, 'in the full sun and with a fresh store of provisions, it took them only four days'.[171] Their improvement signals the way in which experience can lead to rapid behavioural adaptation.

This Thing of Darkness describes harrowing events aboard the *Beagle* which are reminiscent of those detailed in *The Darwin Conspiracy*. The crew encounter what FitzRoy describes as a '*wave ... almost as tall as the boat is long. A monster.* The equation was simple. Any taller, and they would go down'.[172] Amidst the chaos, the sailors 'floundered and struggled and fought, not to keep their balance or their bearings, but to live, just to live'.[173] On another occasion, during a long leg of the voyage, their 'clothes literally rotted on their bodies … salt rubbed their skin raw. Their lips split and bled', and Mr Rowlett 'had, quite simply, not been strong enough to cope with the demands of the south', and consequently dies. Stokes suffers from 'a chronic chest infection, coughing up blood', but he is described as being 'younger, tougher, fitter, a teeth-gritted fighter', and would thus 'make it'.[174] FitzRoy believes that these struggles have awakened '[s]omething primeval' which 'lurked inside him, something that frightened him because he did not know if he could ever exert authority over it'.[175] This feeling is reminiscent of that evoked by Stevenson's Jekyll, and it highlights the idea of the Double, a core concept in neo-Victorian fiction, as noted by the narrator of *The French Lieutenant's Woman*.

Darwin considers the forest in Rio de Janeiro to be ‘a cruel environment’. Each plant is visibly in competition with its neighbours, representing a microcosm of the universal struggle for existence. He sees

> strangulating creepers twisted about each other like tresses of braided hair, each fighting to squeeze the breath from its adversary. Luxuriant parasitical orchids drank the fluid of their victims with dainty care. Lianas crawled over the rotting corpses of fallen trees, the trunks split and gaping open in the fixed attitudes of death.[176]

In this entangled environment, when he comes across ‘an insect that was disguised as a stick, a moth that was disguised as a scorpion, and a beetle that was disguised as a poisonous fruit’, he discovers how these animals survive.[177] Recall that this type of camouflage, or cryptic colouration, was discussed in relation to Fowles’s French Lieutenant.

The citizens of Concepción are rocked by an earthquake, leaving their town looking as though ‘a thousand ships had been shattered in a gale’.[178] Darwin remarks that the building of the town, which ‘cost man so much time and labour’, had been ‘overthrown in one minute. Such is the insignificance of man’s boasted power’.[179] Once again, this shows the way in which Darwin’s real-world theories dethroned humanity.

In Tahiti, Darwin employs two guides to ‘lead him on an expedition up the island’s peak’. To ascend the mountain, the three men find themselves using ‘dead tree trunks as ladders, clambering up rock chimneys and knife-edge ridges, and employing ropes where necessary, they inched their way up the gorge’. Their provisions are scarce because the locals ‘had been insistent about the futility of lugging supplies up to the heights’. Thus, Darwin and the men do what they must in order to survive, ‘constructing an entire house in a matter of minutes from

bamboo-bark', and fishing from the stream. In a somewhat civilised fashion, the 'fire was lit, the dinner was cooked, grace was said, and finally the party fell upon their feast'.[180] This is an example of humans rapidly adapting their behaviour in order to survive in new surroundings.

Allowing survival of the fittest in civilisation may seem abhorrent to Darwin, but he does his utmost to convince FitzRoy of the inevitable struggle for life in the wider animal kingdom, explaining that

> *Every single* organic being is in competition, striving to the utmost to increase in numbers! The birds that sing around us live on insects, or seeds, and are thus constantly destroying life. They in turn, and their eggs, are constantly destroyed by beasts of prey.[181]

Darwin is trying to show FitzRoy that the world is not 'the creation of a benevolent God', centred on 'co-operation', and 'beauty'. Rather, it is a disordered, seething entangled bank in which myriad organisms struggle 'for reproductive success'. This is, of course, 'blasphemous'. It goes against everything in which FitzRoy believes. With the argument at a standstill, FitzRoy and Darwin both 'knew that their friendship was finally and irrevocably at an end'.[182] Their separation is analogous to the clear divide between science and faith in the wake of the *Origin*.

The Patagonian Missionary Society take to 'soliciting charitable donations for the Fuegians among the Christian people of South America'. This does not go according to plan, in that the society

> collected surplus clothing in Buenos Ayres, some of which undoubtedly once belonged to those carried off by malignant diseases. They distributed it at Woollya. Somehow the infected miasma seems to have hung about the clothes … There was an epidemic. More than half the Fuegians at

> Woollya are dead, most probably of the measles. Jemmy is among their number.[183]

The loss of Jemmy Button, and the tragic deaths of the people which FitzRoy and his men had set out to 'improve' with the word of God contributes much strain to FitzRoy's already unstable state of mind. Ultimately, *This Thing of Darkness* ends with FitzRoy's suicide. He asks himself whether he is 'just another monkey, too highly developed for his own good', before ending his life with a razor, '*pulling it swiftly across his throat*'.[184] This method is, of course, true to history, just as it is in *The Darwin Conspiracy.*

All of these novels depict the struggle for existence as a serious, universal, and ongoing phenomenon which affects humans both physically and mentally. These texts show that unchecked or wild behaviour increases the struggle for existence, and thus they are arguing for order and civilisation. Such an argument is representative of the Victorian worldview. The neo-Victorian novelists juxtapose this imperial viewpoint with contemporary, post-colonial understandings of racial difference. The novels act as a critique of both the Othering of 'lower' "races", and the assumed superiority of humans over animals. In this way, these authors are imposing their contemporary worldview onto the text, as all neo-Victorian authors inevitably do.

Reversion

Reversion ever dragging Evolution in the mud.[185]

The subject of reversion proves less prominent in these texts than in their Victorian precursors. This is because devolution has been disproven, and is not a contemporary concern. Instead, neo-Victorian texts focus on the racism inherent in the idea of devolution, as racial equality and racism remain concerns in the

twenty-first century. *The Darwin Conspiracy*, *This Thing of Darkness*, and *The Naturalist* discuss devolution in relation to non-English 'native' tribes. All of these authors are shaped by a broadly post-colonial, post-imperial worldview and their depiction of racial hierarchies and attitudes works to critique the nineteenth-century belief in European cultural and racial superiority.

According to Darwin's character, in *The Darwin Conspiracy* the Fuegian natives 'wore the accoutrements of civilization lightly and … they might revert to their savage origins at the first opportunity'.[186] He predicts their reversion due to his core belief in the 'ladder of progress leading to rationality and morality; primitive tribes occupied the bottom rung. Englishmen and certain Continentals the top'. Darwin is of the belief that this ladder of progress can be climbed, a view evidenced by the 'alacrity with which the savages had adopted the civilized code'. If this ladder can be climbed, however, it is feasible that it may be descended. Thus as the Fuegians 'approached their native habitat', Darwin wondered 'if they weren't losing the qualities of civilization as quickly as they had gained them'.[187]

An extreme example of supposed reversion is presented in the form of Jemmy Button and his ability to become well adapted to the company of the Englishmen on the *Beagle*. When the crew expect him to interact with the natives in Tierra del Fuego, he is said to have 'lost his native tongue … Nothing could induce him to speak the guttural grunts of the Yamana and he even seemed to have lost the ability to understand the language'.[188] It looks, at this point, as if Jemmy will remain in his elevated social position, but as Mr Snow later tells Lizzie Darwin that

> *when Jemmy was returned to Tierra del Fuego, he disappeared for years. I found … a fat, dirty, naked Indian … We brought him on board and couldn't believe it was really Jemmy Button: he seemed to have totally*

> *reverted to a primitive state*.[189]

Such reversion in Fuegians is discussed between Darwin and FitzRoy in *This Thing of Darkness*. Here, Darwin believes that

> the races may have been *conceived* in equality, but who would deny that they are now utterly distinct and utterly unequal? The emotional and intellectual faculties of the Fuegian Indian have been diminished. Their language scarcely deserves to be articulate – it sounds like a man clearing his throat. Even their gestures are unintelligible! If, as you say, they have been rendered hideous by cold, want of food and lack of civilization, then have they not *become* a lower race? What skills they have may now be compared to the instincts of animals, for they do not seem to be improved by experience.[190]

The inequality he speaks of is simply difference, and difference is not deficit. The fact that their language sounds different, and that their gestures are not familiar to Darwin, does not mean that Fuegians are any lower or higher on the supposed ladder of progress. Bennet also believes in the concept of reversion, remarking that, since the Māori are 'surrounded by beautiful countryside, can one account for human nature degrading itself so much as to live in such a den?'.[191] FitzRoy argues against the notion of reversion, saying that 'the fact that their society has degenerated' (from the British cultural ideal) 'does not make them a lesser race … Progress is a social ideal, not a measure of physical development'.[192] In this way, the novel presents Victorian arguments for and against the Social Darwinist notion of cultural reversion, framing this debate with a contemporary critique of these ideas as racist and outdated.

The potential for reversion perplexes Ernst in *The Naturalist*, who asks the *Beagle*'s cabin party what '*the causes of the decay of nations*' are, '*and is it*

possible to prevent them?'.[193] This question could be applied to both biological and cultural 'decay'. The concept of biological decay implies a species hierarchy and is thus anti-Darwinian, but the idea of cultural decay is built on racism, which (as discussed) Darwin was known to perpetuate. Through including characters such as Ernst who question nineteenth-century thought, the neo-Victorian authors subtly expose the flawed bigotry of Victorian views of cultural and biological superiority.

Extinction

I think it inevitably follows, that as new species in the course of time are formed … others will become rarer and rarer, and finally extinct.[194]

All of the novels discussed in this chapter, with the exception of *Morpho Eugenia*, touch on the subject of extinction. Nevertheless, the extent of this discussion pales in comparison to that found in nineteenth-century fiction, particularly that of Wells. Like devolution, extinction has become less of a threatening concept. Rather than being disproven, however, it is the increase in knowledge over time as to how and why extinction operates which has relieved much of the anxiety. Once again, the neo-Victorian novelists reflect contemporary views of Darwin.

The narrator of *The French Lieutenant's Woman* comments on the way in which Victorian society was unaware of the concept of extinction. He remarks how Smithson, as a scientist, has already decided that '*nulla species nova* was rubbish', but he has not yet come to realise

> the corollary of the collapse of the ladder of nature: that if new species *can* come into being, old species very often have to make way for them … extinction was as absent a concept from his mind that day as the smallest cloud from the sky above him … even though … he soon held a very concrete example of it in his hand … a very fine fragment of lias with

ammonite impressions.[195]

Smithson's lack of epiphany in the face of evidence is representative of the extent to which biblical ideas influenced the Victorian psyche.

FitzRoy's character in *The Darwin Conspiracy* demonstrates such an influence when he insists 'during one of his on-board Sunday sermons' that animals 'died out … because they did not make it to Noah's Ark'.[196] Darwin, on the other hand, 'talked of changing habitats and mountains rising up and of an emerging landbridge in the isthmus between North and South America'.[197]

Jemmy Button's tribe 'had once lived far to the north but was driven south through the wilds of Patagonia until it reached this inhospitable country'. The tribe was thus '*in desperate straits, its numbers were falling and it was faced with extinction*,' a predicament possibly brought about by 'hostile tribes', or 'General Rosa's brigades' evicting them.[198] It is later revealed that the tribe was '[w]iped out. Every last one of them'.[199]

In *This Thing of Darkness*, Galapagos tortoises from Charles Island suffer the same fate, having 'been hunted to extinction' by Lawson and his men.[200] He says that all of the 'other islands' populations are headed the same way', and thus thinks that the entire 'species shall be extinct … in another twenty years'.[201] Lawson explains this to Darwin, FitzRoy, and Sulivan 'cheerfully', because he believes in the notion that 'the Lord' placed tortoises 'here for man's benefit', and that they 'will consume the sea turtles' next.[202]

Extinction is discussed in *The Naturalist* when Darwin's character says that, owing to the Māori people's 'most deplorable state of savagery', he has 'no hope the race shall endure fifty years'.[203] Jerningham agrees, telling Lowry that the Māori 'warriors see their age has passed. Their time, their country, is receding. These men, and others like them, are myths. *Ghosts*'.[204] Conroy is critiquing

Social Darwinism here, as from his contemporary vantage point he knows that his characters are incorrect in their assumptions about the Māori "race".

The texts within this chapter approach Darwin and his ideas from a more overt, biographical perspective than those of the nineteenth century. This is in part due to the fact that evolution by natural selection has become a fundamental part of contemporary society; the foundation of myriad scientific disciplines; and a popular theory which is widely taken for granted. Just as in the Victorian fiction discussed in this thesis, neo-Victorian texts, even when metafictional, treat Darwin and his ideas in a serious manner and still addresses the controversy between science and faith, as it remains a contemporary concern. Reversion and extinction, in contrast, are not stressed, as neither have continued evoke social anxieties over time.

The most profound change in the depiction of Darwin and Darwinism in neo-Victorian texts, however, is the way in which they treat issues of evolution; adaptation; assumed superiority; and reversion from a contemporary perspective. Marie-Luise Kohlke is right to insist on the 'self-regarding' nature of 'today's critical engagement with the nineteenth century'. These texts epitomise Kohlke's argument that neo-Victorian narratives are grounded in 'twentieth- and twenty-first century cultural history and socio-political concerns'.[205] Through their use of imagery describing both indigenous and European peoples as animals; through their inclusion of characters such as Ernst who challenge nineteenth-century racial paradigms; through their use of split settings and framing narrators juxtaposing the past and the present; and through their depiction of Darwin as but one thinker engaged in reassessing human and animal connectivity, these texts take issue with nineteenth-century attitudes towards racial difference and racial superiority. Informed by a broadly post-colonial worldview, the neo-Victorian authors reveal

as much about the ideology and mind-set of their own historical moment as they do about nineteenth-century thought.

The Darwin Conspiracy also signals a shift towards a disrespectful reworking of Darwin's character, and is a precursor for the evil Darwin in the Steampunk novel *The Strange Affair of Spring Heeled Jack*. The next and final chapter will thus turn to Steampunk, a playful offshoot of neo-Victorianism.

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[1] Ann Heilmann and Mark Llewellyn, *Neo Victorianism: The Victorians in the Twenty-First Century, 1999-2009* (Hampshire: Palgrave Macmillan, 2010), p. 245.
[2] Andrea Kirchknopf, '(Re)workings of Nineteenth Century Fiction: Definitions, Terminology, Contexts', *Neo-Victorian Studies*, 1.1 (2008), 53-80.
[3] Heilmann and Llewellyn, 2010.
[4] Dana Schiller, 'The Redemptive Past in the Neo-Victorian Novel', *Studies in the Novel*, 29.4 (1997), 538-60, p. 538.
[5] Daniel Candel Bormann, *The Articulation of Science in the Neo-Victorian Novel: A Poetics (And Two Case-Studies)* (Frankfurt am Main: Peter Lang, 2002), p. 62.
[6] Marie-Luise Kohlke, 'Introduction: Speculations in and on the Neo-Victorian Encounter', *Neo Victorian Studies*, 1.1 (2008), 1-18, pp. 10, 13.
[7] Kirchknopf, p. 60.
[8] Kohlke, p. 14.
[9] John Fowles, *The French Lieutenant's Woman* (Jonathan Cape, London, 1969), p. 440.
[10] Fowles, p. 53.
[11] Ibid.
[12] Fowles, pp. 278-9.
[13] Fowles, p. 285.
[14] A.S. Byatt, 'Morpho Eugenia', in *Angels and Insects* (London: Chatto and Windus, 1992), p. 16.
[15] Byatt, p. 19.
[16] Byatt, p. 33.
[17] Ibid.
[18] Byatt, p. 99.
[19] Byatt, p. 102.
[20] Byatt, p. 86.
[21] John Darnton, *The Darwin Conspiracy* (New York: Random House, 2005), p. 11.
[22] Darnton, p. 35.
[23] Darnton, p. 106.
[24] Darnton, p. 222.
[25] Darnton, p. 224.
[26] Ibid.
[27] Darnton, p. 293.
[28] Darnton, p. 294.
[29] Ibid.
[30] Darnton, pp. 294-295.
[31] Darnton, p. 294.
[32] Darnton, p. 297.
[33] Harry Thompson, *This Thing of Darkness* (London: Headline, 2005), p. 138.
[34] Thompson, p. 63.
[35] Ibid.
[36] Thompson, p. 70.
[37] Ibid.
[38] Ibid.
[39] Ibid.
[40] Thompson, p. 113.

[41] Ibid.
[42] Thompson, p. 352.
[43] Thompson, p. 341.
[44] Ibid.
[45] Thompson, p. 481.
[46] Thompson, p. 481.
[47] Ibid.
[48] Thompson, p. 220.
[49] Thompson, p. 516.
[50] Thompson, p. 700.
[51] Ibid.
[52] Ibid.
[53] Thompson, pp. 605-709.
[54] Thompson, pp. 624, 138.
[55] Thompson, p. 532.
[56] Thompson, p. 533.
[57] Thom Conroy, *The Naturalist* (Auckland: Random House, 2014), p. 132.
[58] Conroy, p. 139.
[59] Ibid.
[60] Conroy, p. 255.
[61] Conroy, p. 310.
[62] Thompson, p. 304.
[63] Fowles, p. 157.
[64] Ibid.
[65] Jackson, 221.
[66] Darnton, p. 35.
[67] Ibid.
[68] Darnton, p. 12.
[69] Darnton, p. 293.
[70] Thompson, p. 167.
[71] Thompson, p. 226.
[72] Thompson, p. 277.
[73] Thompson, p. 280.
[74] Thompson, p. 281.
[75] Thompson, p. 401.
[76] Thompson, p. 517.
[77] Thompson, p. 416.
[78] Thompson, p. 469.
[79] Thompson, p. 483.
[80] Thompson, pp. 707, 517.
[81] See: Jonathan Sarfati, *Refuting Evolution* (Georgia: Creation Book Publishers, 1999), chap. 8.
[82] Thompson, p. 630.
[83] Thompson, p. 663.
[84] Thompson, p. 668.
[85] Charles Darwin, *On the Origin of Species*, ed. by Jim Endersby (Cambridge: Cambridge University Press, 2009), p. 301.
[86] Fowles, p. 100.
[87] Fowles, pp. 104, 109.
[88] Fowles, p. 169.
[89] Fowles, pp. 183-4.
[90] Fowles, p. 129.
[91] Fowles, p. 232.
[92] Fowles, p. 200.
[93] Fowles, p. 233.
[94] Byatt, p. 89.
[95] Byatt, p. 100.
[96] Darnton, pp. 215, 236.
[97] Darnton, p. 99.
[98] See: Thompson, pp. 302, 314, 318, and 319.
[99] Darnton, p. 97.
[100] Darnton, p. 99.
[101] Darnton, p. 141.

[102] Thompson, pp. 302-3.
[103] Darnton, p. 126.
[104] Darnton, p. 127.
[105] John C. Greene, 'Darwin as a Social Evolutionist', *Journal of the History of Biology* 10:1 (Springer 1977), 1-27 (pp. 1-2).
[106] Greene, pp. 2-3.
[107] Greene, p. 24.
[108] Darnton, p. 222.
[109] Darnton, p. 223.
[110] Thompson, p. 559.
[111] Thompson, p. 533.
[112] Thompson, p. 57.
[113] Thompson, p. 96.
[114] Thompson, p. 52.
[115] Thompson, p. 69.
[116] Thompson, p. 71.
[117] Thompson, p. 305.
[118] Thompson, p. 333.
[119] Thompson, pp. 487, 512.
[120] Thompson, p. 583.
[121] Thompson, p. 586.
[122] Thompson, pp. 600, 581.
[123] Thompson, p. 570.
[124] Thompson, p. 573.
[125] Thompson, p. 659.
[126] Thompson, pp. 678, 624.
[127] Thompson, p. 533.
[128] Thompson, p. 123.
[129] Thompson, p. 179.
[130] Conroy, p. 17.
[131] Conroy, p. 17; Darwin, *Beagle*, pp. 386-401.
[132] Conroy, p. 252.
[133] Conroy, p. 104.
[134] Conroy, p. 174.
[135] Conroy, p. 197.
[136] Conroy, p. 68.
[137] Conroy, p. 69.
[138] Conroy, p. 195.
[139] Conroy, p. 269.
[140] Darwin, *Origin*, in Fowles, p. 145.
[141] Fowles, p. 169.
[142] Fowles, p. 143.
[143] Fowles, p. 286.
[144] Fowles, p. 85.
[145] Fowles, p. 172.
[146] Fowles, p. 354.
[147] Byatt, p. 24.
[148] Byatt, p. 38.
[149] Darnton, p. 11.
[150] Darnton, p. 87.
[151] Darwin, *Origin*, p. 55.
[152] Darnton, p. 87.
[153] Ibid.
[154] Darnton, p. 104.
[155] Darnton, pp. 33-4.
[156] Darnton, pp. 151-65.
[157] Darnton, p. 146.
[158] Conroy, p. 361.
[159] Conroy, p. 61.
[160] Conroy, p. 70.
[161] Ibid.
[162] Conroy, p. 82.

[163] Conroy, p. 162.
[164] Conroy, p. 163.
[165] Ibid.
[166] Conroy, pp. 265-6.
[167] Conroy, p. 186.
[168] Conroy, p. 282.
[169] Conroy, p. 290.
[170] Conroy, p. 291.
[171] Conroy, p. 293.
[172] Thompson, p. 309.
[173] Thompson, p. 310.
[174] Thompson, p. 402.
[175] Thompson, p. 91.
[176] Thompson, p. 251.
[177] Thompson, p. 254.
[178] Thompson, p. 437.
[179] Thompson, p. 447.
[180] Thompson, pp. 494-495.
[181] Thompson, p. 532.
[182] Ibid.
[183] Thompson, p. 724.
[184] Thompson, p. 729.
[185] Alfred Lord Tennyson, 'Locksley Hall Sixty Years After', in *Ballads and Other Poems*, ed. by Hallam Lord Tennyson (London: Macmillan, 1908), 279-304 (p. 295).
[186] Darnton, p. 98.
[187] Darnton, p. 165.
[188] Darnton, p. 170.
[189] Darnton, p. 145.
[190] Thompson, p. 304.
[191] Thompson, p. 501.
[192] Thompson, p. 304.
[193] Conroy, p. 59.
[194] Darwin, *Origin*, in Fowles, p. 360.
[195] Fowles, p. 54.
[196] Darnton, p. 137.
[197] Ibid.
[198] Darnton, pp. 287-288.
[199] Darnton, p. 301.
[200] Thompson, p. 477.
[201] Thompson, p. 478.
[202] Ibid.
[203] Conroy, p. 16.
[204] Conroy, p. 250.
[205] Kohlke, pp.10, 13.

Chapter Four: Darwin and Steampunk

'*What a merry freak show this is!*'.[1]

If respect for Darwin and his theories is the hallmark of most neo-Victorian texts, the inverse is true of Steampunk representations of the famous scientist, which tend to be playful and irreverent. Darwin features as a character in several of the texts in this chapter, and his ideas permeate the Steampunk world of science and discovery. Steampunk authors are less burdened by historical veracity than their neo-Victorian peers, appropriating the biographical Darwin and his theories for their own alternate history ends.

A nineteenth-century aesthetic is commonly associated with the Steampunk genre, but the term 'Victorian' has , according to Jeff VanderMeer, lost its ties to historical boundaries, in that Steampunk fiction often 'uses it as a catchall to evoke the Industrial Revolution', with 'no historical basis'.[2] This stretching of the Victorian period both temporally and geographically is seen in Scott Westerfeld's *Leviathan* trilogy, and Mark Hodder's Burton and Swinburne tetralogy, with the first series set in the early twentieth century, and Hodder's texts following the protagonists from Britain to Africa.

The tropes of scientific and technological discovery and hero versus villain spans much of Steampunk fiction, but an overall definition of the genre is tricky in that it is 'malleable'.[3] Ekaterina Sedia argues that Steampunk should not be defined by 'trope-based definitions', because it 'straddles' all of the 'artistic or historical categories it draws on', and thus 'perforates their boundaries'.[4] What the genre should, instead, be known for is the 'operational – that is, what do these stories do?'. Like neo-Victorian fiction, Steampunk draws on works by authors

such as ‘Wells and Verne’, in order to offer ‘an ironic or critical approach to [Victorian] ideals and an insubordinate outlook on the modern world’.[5] Once again the past is refracted through the concerns and attitudes of the present, with Steampunk narratives frequently employing their alternate history settings to highlight the ‘socio-political struggles that we see in the world’ today.[6]

The way in which Steampunk texts reflect contemporary concerns is highlighted in the depiction of proto-feminist women in my chosen narratives. The first novel in this chapter, K.W. Jeter’s *Morlock Night* (1979) contains a strong female character, Tafe, without whom Edward Hocker would have died in the battlegrounds of London. Tafe represents the value of women in contemporary society, whilst critiquing the way in which they were marginalised in many respects during Victorian times.

In Scott Westerfeld’s *Leviathan* trilogy (2009-11), Deryn Sharp dupes the Royal Air Service into recruiting her as a midshipman under the guise of a boy named Dylan. This highlights the way in which, despite superior skill in a field, women were not allowed to do a ‘man’s job’. The *Leviathan* trilogy also incorporates Dr Nora Barlow, Darwin’s real-life granddaughter, and places her in the position of Lady Boffin, a revered eugenicist. By doing so, the series reflects contemporary attitudes about women and gender equality.

Mark Hodder’s *The Strange Affair of Spring Heeled Jack* (2010), which is the first novel in his Burton and Swinburne series, re-imagines famed nurse Florence Nightingale, placing her alongside Darwin as one of the key pioneers of fantastical eugenic experiments. Her inclusion represents the fact that some Victorian women excelled in careers, but in professions deemed fit for their sex, such as nursing was. By placing her alongside Darwin, Francis Galton, and Isambard Kingdom Brunel as one of the vital cogs in eugenicist experimentation,

Nightingale is arguably elevated. From a Victorian perspective, she assumes a man's role, and thus is accorded more agency. As the Burton and Swinburne series progresses, women become more prominent figures, with Burton's ex fiancé Isabel Arundell becoming a kind of Amazonian prototype. From a contemporary viewpoint, this shows how women's opportunities were 'actively suppressed'. Victorian women were expected to be passive, homebound, and disinterested in intellectual life. Women's opportunities are now acknowledged and embraced in contemporary society.[7]

Darwin's theories are taken seriously by these authors in that they are not challenged or disproved within the texts in this chapter. Scott Westerfeld's *Leviathan* (2009), *Behemoth* (2010), and *Goliath* (2011) make up a contemporary trilogy of young adult Steampunk novels set during King George V's reign. The novels follow real historical events, namely World War One. Beginning in 1914, the series focuses on Darwinian taxonomy and his discoveries in animal physiology, and address the debate of Genesis versus Evolution and the anxieties surrounding this issue. These novels use the war and 'crude propaganda' to highlight anxieties relating to Darwinian ideas in the early twentieth century, pitting 'Darwinists against Clankers', or science against technology.[8]

Mendel's ideas are attributed to Darwin in this series. In keeping with the terminology of the early twentieth century, contemporary genetic terminology is not used. Darwin is said to be able to 'weave new species from the old, pulling out the tiny threads of life and tangling them together under a microscope'. Clankers consider the resulting creatures to be 'godless abominations'.[9]

Spring Heeled Jack also critiques the way in which Darwin's theories, in general, 'proved dangerous' for Victorian society.[10] Thomas Bendyshe's character believes that 'Darwin … says that there is no God!' to which Burton rebuts:

'Darwin hasn't suggested any such thing. It is others who have imposed that interpretation on his *Origin of Species*'.[11]

In contrast to all of the serious issues critiqued in Steampunk, Darwin himself is approached from a playful, and sometimes an ahistorical, perspective. As previously stated in the conclusion to my last chapter, *The Darwin Conspiracy* was a precursor to the way in which Steampunk novels such as *Spring Heeled Jack* play with and subvert Darwin's motivations and personality.

In terms of the six key Darwinian ideas which this thesis addresses, all of the texts in this chapter discuss five: evolution and selection; comparing species; the struggle for existence; reversion; and extinction. Discussions on the history of humanity are excluded, and those on extinction are brief as the texts are virtually silent on these issues. As discussed in the preceding chapter, this is likely owing to the fact that the theory of evolution by natural selection is now widely taken for granted. Thus, the history of humanity and extinction are not contemporary concerns. As per previous chapters, I will discuss these novels chronologically by publication date.

Evolution and Selection

Darwin had figured out how … evolution had squeezed a copy of Deryn's own life chain into every cell of her body.[12]

Jeter, Hodder and Westerfeld all discuss the concept of evolution and adaptation, with *Morlock Night* adopting Wells' descriptions of the Morlocks and their subterranean habits. *Spring Heeled Jack* is drenched in examples of selective breeding and its consequences, while the *Leviathan* trilogy focusses on the way in which genetically engineered creatures can work together in mutual harmony to assist humanity. These novels do treat Darwin's ideas with a measure of respect, but the characteristic madcap fun of Steampunk is usually at the fore, with

evolution an excuse for flights of imaginative fantasy as well as scientific seriousness. In the midst of this fun there is also, on occasion, a use of the alternate history setting to challenge aspects of Darwin's legacy that trouble contemporary audiences, such as selective breeding. Jeter's novel showcases the way in which evidence does not always lead to acceptance. Hocker has difficulty accepting Merlin's magical abilities, and thus asks him 'What ungodly tricks have you been playing upon me?'. Merlin responds 'Tricks, indeed! If a blindfolded man was walking upon the edge of a cliff and someone else tore the cloth from his eyes, no matter how much seeing his danger scared the fellow, would you call it a 'trick'?'.[13] Hocker's difficulty is attributed to the 'overweening rationalism of his time', due to which he could 'mentally dismiss a mastodon in front of him if it happened to be wearing the wrong school tie'.[14] The Bible's Book of Genesis was the overarching real-world Victorian rationale for the existence of humanity. Evidence for evolution would thus have arguably been as difficult to digest as Merlin's magical abilities.

By the end of the novel Hocker has been repeatedly exposed to examples of evolution in the form of the Morlocks, and concedes that 'the process of evolution had made us into separate species. No matter what our common origins might be, they were a breed apart'.[15] Evidence of speciation lies in the marked physiological differences between humans and Morlocks. Hocker observes that

> Round lenses of dark blue glass covered their eyes, and if these glasses were jostled from their position on anyone [sic] Morlock's face, his great goggling eyes screwed up tight with pain from the submarine's illumination until they were once again covered.[16]

The Morlocks thus differ from humans in that they have adapted to dark conditions, and so they struggle to survive in the light. This kind of gradual

biological adaptation is contrasted by '[t]he human mind's facility for landing poised as a cat in unfamiliar situations and making the best of them'. This is demonstrated by Hocker, who had become

> So inured … to the foul conditions of the universe that these sewers and passageways formed, that I was scarcely aware of the ordinarily nauseating odour that was emitted by the decaying matter in the water.[17]

Humans are thus capable of rapid behavioural adaptation, but 'the successful [biological] adaptation of Man to a subterranean existence lies in the far future with the rise of the Morlocks that are now besieging us'.[18] In this way, Jeter's novel does not grant Morlocks or humans the power of rapid biological adaptation. Instead, it stays true to Darwin's theory of gradual change over successive generations, just as Wells' *Time Machine* does.

Spring Heeled Jack is heavily focussed on the process of selective breeding and its consequences. One term used to describe this in the novel is 'eugenics', a contemporary science born out of the tradition of selective breeding, and enhanced by the application of genetics, a science which was not fully developed until after Darwin's time. Being Steampunk, the timeline of *Spring Heeled Jack* is not bound by historical accuracy, and thus 'eugenics' is 'adopted by the British public' in the 1860s.[19] The ramification is that 'whatever modification they made to a species, it always seemed to bring with it an unexpected side effect'.[20] Runner dogs are born 'knowing every address within a fifty-mile radius of its birthplace and with the ability to carry mail between those locations, barking and scratching at the recipient's door until the letter was collected'. Nevertheless, they have 'a phenomenal appetite', and thus cost recipients 'a considerable amount of money in dog food'. Steampunk's sense of fun is evoked with 'messenger parakeets', which, in lieu of telephones 'carried

spoken communications' effectively. They also 'swore at, mocked, and offended everybody they encountered'.[21] Transport horses are modified so as to stand 'fifteen feet high at the shoulder', in order to pull 'cargo wagons' that 'were often the size of small houses'. The drawback of these horses is that they 'had no control over their bladders or bowels and were overproductive [sic] in both departments'.[22] Despite these 'side-effects', Burton considers a '[e]ugenicist-bred swan … dragging a box kite behind it' to be a fast, efficient 'form of transportation', and there are no faults recorded with the 'specially bred oxen', or the 'Broomcat'.[23]

Similarly, the grafting experiments conducted by Hodder's Florence Nightingale and Brunel come with unexpected 'side-effects', most troublesomely 'spontaneous combustion', especially when grafting human organs to wolves.[24] These experiments are reminiscent of those in *Moreau*, as they aim to '[raise] an animal up to a human level of evolution', a process only successful in the case of Laurence Oliphant and his white panther.[25] In this way, not all of the eugenic experiments in the novel produce unwanted 'side-effects'. However, the fact that some do is indicative of the random processes of mutation and selection, be it natural or artificial. The novel is thus cautioning against the overreliance on selective breeding, as one cannot always guarantee the outcome.

Darwin's related theory of pangenesis is 'revised' in *Spring Heeled Jack*, and has 'incorporated … the work of … Gregor Mendel' in order to action 'Genetic Inheritance'. Hodder's Darwin is depicted as an evil genius who aims to create chimney sweeps who will, over generations, become 'ideally suited to their vocation; able to fit into any flue, scraping off the soot with their bristles. Living brushes!'[26] By using such an extreme example, the novel is drawing attention to the potential dangers of eugenics. The fact that humans are being exploited, and

modified so as to serve as commodities, reflects the way in which selective breeding does this to animals on a regular basis. Such an idea also serves to elicit empathy and compassion for animals who are treated in such a manner, and thus Darwin's entangled bank theory is brought to light. This is an example of Steampunk subverting Darwin's motives and personality, whilst also taking his theories seriously.

Westerfeld's *Leviathan* Trilogy is interested in selective breeding and genetic alteration to much the same extent as Hodder's novel. However 'human life chains were off-limits for fabrication' in this case, a decision which reflects the controversy surrounding human genetic intervention in contemporary society.[27]

Westerfeld also highlights Steampunk's sense of fun by combining organisms which, together, complement one another in form and function in order to serve humans. *Leviathan* introduces: a 'carriage drawn by two lupine tigeresques ... half-wolf tigers'; 'A Huxley Ascender .... made from the life chains of medusae−jellyfish and other venomous sea creatures'; message lizards, and '[s]trange six-legged hydrogen sniffers ... searching the membrane for leaks'.[28]

Goliath introduces a creature which has been fabricated in order to heal humans, a small 'half plant and half animal' medical 'compress'.[29] In this series there are no unexpected side effects exhibited by any of the genetically modified creatures as, unlike Jeter and Hodders' novels, the *Leviathan* trilogy overtly advocates such practices. That is not to say that Westerfeld's series reads as being ignorant to the inherent dangers of genetic alteration. Indeed, creatures such as fléchette bats (which 'eat … metal *spikes*') and a 'kraken'-like 'behemoth' are created specifically for the purpose of assisting human warfare.[30] The negative consequences of such creations are almost entirely ignored, owing to Steampunk's

ability to adopt a kind of nostalgic, 'playful and postmodern' outlook which fuses together the best elements of past and present.[31]

The series advocates mutualism between species, a concept which is discussed at length in historical Darwin's *Descent*. The main mutual relationship which spans the series is that between the myriad animals which make up the Leviathan airship, as it not 'one beastie, but a vast web of life in ever shifting balance'.[32] The outer structure of the ship is mainly composed of a whale, inside which many animals interact, such as 'bees' which 'gathered ... nectar and distilled it into honey, and then the bacteria in the airbeast's gut gobbled that and farted hydrogen'.[33] In this way, Westerfeld's series is conforming to the Darwinian idea of species connectivity, or the entangled bank, whilst also highlighting the contemporary Gaia hypothesis. The Gaia hypothesis, as put forward by James Lovelock in the 1960s, extends the entangled bank theory to include the Earth as a whole, capable of manipulating 'the inorganic world' in order to maintain 'an optimum life on the surface' of the Earth.[34] Westerfeld's series thus adopts an eco-theme, reflecting the contemporary preoccupation with the 'political', yet 'humanitarian' green movement in which society strives to 'preserve the planet' through acts such as recycling and reducing carbon emissions.[35]

Comparing Species

'*You damned primitive ape!*'.[36]

Westerfeld's trilogy does not contain any species comparisons, owing to the fact that the novels are primarily concerned with species' ability to work together regardless of similarities and differences. *Morlock Night* and *Spring Heeled Jack* contain few species comparisons, possibly due to the fact that Darwin's entangled

bank is widely accepted in contemporary culture and thus there is no compulsion to dwell on it. Jeter's novel does, however, advocate the entangled bank by explaining that '[t]hose men who cast their lot with the Morlocks at last thought that they saw more of a similarity between themselves and the Morlocks than with the human beings of the surface'.[37] This shows homology (and thus shows species connectivity) whilst also advocating racial equality, which is more of a widespread contemporary concern than species equality. Perceptions of cultural differences are addressed when Hocker '[f]or a moment … was stricken with revulsion at … cannibalism'. He then realises that this practice has arisen out of necessity due to circumstance, and thus 'it would make as much sense to accuse a lion or other wild man-eater of the same crime'.[38] Hocker sees that the taboo of cannibalism is a social construct, enforced as a way of distancing humans from their animal roots.

Spring Heeled Jack's Darwin finds homology between 'a poet' and 'a lark', as both of these use 'song' or sound to attract mates. Unlike his historical namesake, however, he does distance humans and animals, believing that evolution is progressive, as previously discussed.[39] Burton also recognises homology after being exposed to both 'the depths of London' and 'the remotest regions of Africa', which he finds to be 'remarkably similar'.[40] He learns the same lesson which is preached by Ernst Dieffenbach in *The Naturalist*. That is, that prolonged exposure leads to understanding, as 'an outsider, in any culture, is offered but a fragment of the truth'.[41] In this way, Hodder's novel critiques the practice of Othering, and advocates racial equality (an ongoing contemporary concern) and species equality by an analogy.

Spring Heeled Jack also questions the attributes one must have in order to be considered human. Burton's description of Jack is reminiscent of Stoker's

Count Dracula, particularly in the sense that they both have '[r]ed eyes', a characteristic not usually associated with humans.[42] Sister Sadhvi Raghavendra's recollection is still closer to Dracula, with Jack's clothing and 'his pointed fingernails' being 'all black', and his 'skin and hair' being 'albino'. He also has 'vertical pupils like a cat's', 'his teeth — when he smiles — are all canines', and he possesses the power of hypnosis. [43] Burton also comments that Lord Palmerston possesses Dracula's attributes, such as 'too red' lips, and a 'face to white and masklike'.[44] These similarities between Dracula and Hodder's characters pay homage to Stoker's fiction. They also highlight the way in which perceived difference leads to fear and Othering.

Wells' *Moreau* is another nineteenth-century intertext within *Spring Heeled Jack*, in that the *loups-garous* are originally thought to be human-to-animal transformations, but then later revealed to be wolf-to-human experiments. They resemble Moreau's creatures in that they are 'sort of *twisted*; their bodies are too long and too narrow in the hip; their chests too deep and wide; their legs too short. Their faces, though … are the faces of dogs!'[45] As in *Moreau*, these animal to human experiments showcase the way in which artificial selection does not always yield the desired result.

Whilst Jeter's Hocker accepts that the taboo of cannibalism is a social construct, Hodder's Swinburne advocates societal rules by stating that '[i]nfanticide is unimaginable … No one normal would consider such an option'.[46] In this way, *Spring Heeled Jack* uses infanticide, rather than cannibalism, to distance humanity from other animals such as lions (who practice infanticide). The novel is thus reflecting the Victorian attitude of assumed superiority, whilst also highlighting the carry-over concern of relativism

(constructionism versus moral realism) which produces anxieties in human societies to this day.

Struggle for Existence

'*This comfortable world of yours is poised above an abyss of … darkness and despair*'.[47]

Whilst *Morlock Night* and the *Leviathan* trilogy focus on war, *Spring Heeled Jack* focusses on the internal struggle of one man, and the consequences that this has for others. All three Steampunk universes depict life as a struggle, in part as a direct reflection of Darwin's ideas and in part as the inevitable result of their adventure narrative structure which requires antagonists and difficult circumstances to be overcome.

Morlock Night tells of a battle between humans and Morlocks, in which the 'last vestiges of Order had fallen to brute Chaos', as the Morlocks have control of the time machine.[48] Hocker must struggle with the reality of the situation, which sees him wracked with 'sheer animal panic', and struggling with the choice between fight and flight.[49] In addition to these struggles, there is an analogy to Darwin's impact on Victorian Christian values, when 'Christopher Wren's great church dome [is] shattered'.[50] This reflects the way in which Darwin inadvertently implies that there is no God, or the way in which he overtly rebelled against the Book of Genesis, thus undermining widespread Victorian values.

An analogy of Darwin's controversial impact is also made in *Spring Heeled Jack*, as Darwin is depicted as a villain. This is an example of Steampunk's subversion of Darwin's personality for the purpose of fun and entertainment, but it also reflects the fact that his theories undermined the comforting teachings of the Bible, and caused anxieties in the nineteenth century. In Hodder's novel, Darwin declares that Swinburne 'will be disposed of', and

considers his protests to be 'the survival instinct in action'.[51] Swinburne deliberately puts himself in this situation, as he uses disguise in order to discover the whereabouts of missing chimney sweeps. His action is analogous to the physiological and behavioural mimicry exhibited by animals such as the cuckoo and the lyre bird. Darwin talks of mimicry in the *Descent*, citing the need for protection as one major catalyst for such adaptations.[52]

Burton uses mimicry for this exact purpose when he disguises himself as a 'Sikh' in order to avoid 'trouble', as 'Sikhs possessed a reputation — undeserved, as it happened — for ferocity'.[53] The stereotype of Sikhs as ferocious is an example of racist Othering. Burton says that it is 'in the British Empire's interest to portray other cultures as barbarous and uncivilised; that way there's less of an outcry when we conquer them and steal their resources'.[54] The duality of Burton and his faux Sikh persona is an overt allusion to the Double, a concept which also surfaces when Montague Penniforth muses how the everyday 'Burton … didn't seem to belong to the other half … He acted like a gentleman but he'd the face of a brute … Strange!'[55] This echoes the way in which Jemmy Button from the *Darwin* Conspiracy, and Nahiti from *The Naturalist* adopt dual-cultural ways of life.

Like Jekyll, Burton has the 'sensation' that 'he was a divided identity; that two persons existed within him, ever fighting to thwart and oppose each other'. He takes 'quinine' in order to calm this sense of duality, but he is overcome with '[p]ervading guilt' about the 'death of Penniforth', which 'struggled with a savage desire for revenge', and 'the impulse to flee from this king agent's role wrestled with the determination to find out where the *loups-garous* came from, and why they were … abducting children'. [56]

Burton's 'malarial attacks' (as he calls his moments of duality) stem from

trauma attained during his time in Berbera. It was here that Burton was struck by a 'barbed javelin' which pierced through both cheeks 'knocking out some back teeth, cutting his tongue, and cracking his palate'.[57] He was rescued by El Balyuz, but meanwhile Speke was 'marched away from the camp, which was now being looted and destroyed'.[58] A 'spear was stabbed at his heart', but he 'deflected it with his bound hands … He and the African fought over it — one trying to gain possession, the other struggling to retain it'. Speke was eventually able to escape as '[i]nstinct took over' and he sent his 'bound fists … smashing into the man's face'.[59] From a Darwinian viewpoint, Burton and Speke are fit individuals adapted for physical competition. Burton's ability to fight is also displayed in an urban setting, when he is attacked by 'a gang of men'. He 'found himself surrounded by three hard-eyed men' one of whom he hit 'with such force that the jawbone broke with an audible snap and the crook's feet left the ground'.[60]

Burton's malarial attacks, although originally brought on by trauma such as this, eventually become associated 'not with the delirium of malaria but with Spring Heeled Jack', owing to the fact that he was 'physically assaulted' by him.[61] There is thus a stark contrast between Burton's physical and mental fitness. Whilst he is clearly adapted for physical battle, he is prone to psychological struggle, and this could potentially decrease his overall fitness from a Darwinian perspective.

Burton is not the only character to be assaulted by Spring Heeled Jack. In order to exist in his own time, Jack, or Edward Oxford, must find and rape one of his female ancestors. Oxford embarks on a tirade of attacks, in which he searches for a woman with a 'birthmark shaped like a rainbow'.[62] His original modus operandi is to hold women still and ask them if they possess such a birthmark, but as he grows more desperate, he resorts to ripping dresses down the front.[63]

Swinburne struggles when he becomes forced into '[c]at and mouse' with Oliphant, but once again Burton comes to the rescue, 'pounding his opponent's face to a pulp', and thus proving his superior adaptation to physical battle.[64]

Burton witnesses an internal struggle akin to that between Jekyll and Hyde. When Speke (with his body altered by machinery) attempts to choose between letting Burton escape, or reporting him. Speke's 'face … was filled with perplexity, sorrow, and yearning … he gasped. 'I shouldn't — I can't — I didn't — didn't —" He reached up to the key that projected from the machinery above his left ear and started to wind it. "I have to — to — to — to decide," he stuttered'.[65] Ultimately, Burton 'dived through the door and fled down the hallway', whilst 'Speke threw his head back and bellowed: "Oliphant! Burton is here!"'.[66] Once again, Burton survives. In contrast, Darwin — the man who teaches us of such concepts — is outcompeted. In his final moments, he yells that '[t]he evolved must survive', evidently believing that he has progressively evolved into a superior creature. Alas, his hideout becomes nothing but 'a smear among the landscape', and nothing is left of him except mangled 'remains'.[67] Darwin's death can thus be read as a critique of the progressive evolution fallacy.

Westerfeld's Darwin is more closely modelled on his namesake, in that he is not depicted as ever having been villainous or genetically modified. Nora talks of her grandfather's ability to '[connect] cats and clover', or envision the entangled bank. She cites competition as a necessary component of such entanglement, using the example:

> cats eat mice … mice ... attack the nests of bees for their honey. And red clover cannot grow without bees to pollinate it. Near towns there are more cats, fewer mice, and thus more bees — resulting in more red clover.[68]

The point being that 'if you remove one element ... the entire web is disrupted'.[69]

Behemoth shows the way in which competition can be used in order to aid humans, when Nora introduces 'vitriolic barnacles'. They have been created for the purpose of warfare; specifically to destroy enemy 'kraken nets'. The expectation is that

> they'll begin to multiply, interbreeding with the natural barnacles already there. In a few weeks the colony will be overcrowded … they shall begin to struggle, trying to dislodge each other's relentless grip. Their vitriolic ooze will tear away at the nets.[70]

The Leviathan ship itself also relies on competition in that the '[u]mpteen different beasties' which make it up 'were always struggling among themselves in messy, snarling equilibrium'.[71] Westerfeld's series thus shows the way in which biological competition can be viewed as a positive, universal phenomenon, necessary in the functioning of Darwin's entangled bank. Such an outlook directly contrasts that of Hodder, who depicts interspecies competition as a negative affair, resulting in a kind of dystopic future for humanity and Earth at large. The disparity between these two viewpoints is possibly owing to the way in which Darwin was perceived in the nineteenth century, versus how he is perceived now. Hodder is attempting to evoke a nineteenth-century tone, highlighting the way in which Darwin's ideas were misunderstood, and thus created anxiety. Westerfeld, on the other hand, is looking at the past through a more deliberate contemporary lens. He thus reflects greater contemporary acceptance of Darwin's views, hereby highlighting the more positive aspects of Darwin's theories.

Reversion and Extinction

Give up altogether the idea that there is … reversion to some lowly organised … man.[72]

There will be much extinction of the less improved forms.[73]

Morlock Night and *Spring Heeled Jack* both depict characters who are arguably devolved, whilst the *Leviathan* trilogy does not touch on this subject. Extinction is not discussed in *Spring Heeled Jack* or the *Leviathan* trilogy, but it is mentioned in *Morlock Night*. The lack of discussion on these two concepts reflects the way in which contemporary society has come to embrace Darwinian ideas. Reversion and extinction are now well understood, to the point where they are no longer dominant societal concerns.

Jeter alludes to devolution when the Morlocks and Eloi are described as 'cannibalistic brutes' and effete wastrels', respectively.[74] Hocker believes that an 'awful metamorphosis' could see him become a Morlock if he 'didn't soon return to the surface world's light'.[75] These descriptions do not overtly include devolution, but the language used to describe the Morlocks and Eloi signals their departure from humanity's ideal, and thus they are considered lower species. The Morlocks are additionally referred to as 'barbaric', and speaking a 'degenerated' language. [76] Such descriptions are more suggestive of devolution. From a Darwinian perspective, of course, both the Morlocks and the Eloi are evolved species with specific adaptations to their discrete environments (just as they are in Wells' *The Time Machine*). These adaptations have been discussed in the evolution and selection section of this chapter, and they show that *Morlock Night* favours evolution more so than Wells' novel. Whilst *The Time Machine* certainly contains evidence for evolution, Wells' Morlocks are depicted as weaker, smaller, less articulate human offshoots. *Morlock Night*, in contrast, depicts some of the Morlocks as tall, military-like men, who have their own language and an ability to learn English. From an imposed nineteenth-century viewpoint this suggests they are a product of progressive evolution. In this way, Jeter advocates the contemporary rejection of devolution in favour of evolution.

Spring Heeled Jack makes overt allusions to devolution, with Burton commenting that Spring Heeled Jacks acts of 'sexual aggression … are indicative of regression rather than evolution', because '[e]volution should move us away from animalistic behaviour, not toward it!'.[77] Burton thus believes in the fallacy of progressive evolution. Swinburne appears to share this belief in that he considers 'the worst dregs of humanity' to have been 'pushed … into an animal — almost vegetative — state'. The people of the Cauldron area are said to 'degenerate', to the point where 'even Charles Darwin would have been hard-pressed to find any signs of evolution there'.[78] Comments such as these highlight the way in which progressive evolution was commonly advocated in order to raise the status of one species or "race" over another. The increased understanding of Darwin's theories over time has resulted in a widespread abandonment of progressive evolution, and a decline in Social Darwinism. Racism, of course, remains. Indeed, by bringing the fallacy of progressive evolution to light, Jeter is arguing that Darwin's theories in no way justify such prejudices.

Jeter offers the briefest glimpse of human extinction when Hocker and Tafe are searching for ammunition among 'the slaughtered forms of men and women, who had been the last flickering light of human society in the besieged city and the world beyond'.[79] Rather than commenting on extinction as a contemporary concern (as, of course, it is not) Jeter is alluding to the way in which Wells' time traveller witnessed the end of humanity, and the end of Earth as humanity knows it. Unlike in *The Time Machine*, however, *Morlock Night* sees human extinction avoided when Arthur 'raised Excalibur and struck deep with it into the shining metal and crystal' of the time machine. Thus, '[t]he just order of the Universe was restored'.[80] Hope is restored in the closing passage of the text when it is revealed that Tafe 'came from …the future' which is now 'a world free

from the Morlocks'. Jeter is commenting from a contemporary perspective and this outcome reflects the loss of real-world anxieties surrounding extinction.

The texts in this chapter function, in large part, to entertain readers. Embracing Steampunk's hallmark sense of fun by twisting the past, and incorporating fantasy elements, these novels critique serious nineteenth-century issues, some of which continue to be debated in contemporary society. There is a curious duality in relation to Darwin in these novels. On the one hand, the widespread contemporary acceptance of Darwin's thinking is reflected through the way in which theories such as the entangled bank, evolution, and natural selection permeate Jeter, Hodder and Westerfeld's alternate histories. At times Darwin is repackaged as a kind of prototype for the green movement and Gaia hypothesis. Yet Darwin himself is not always treated with respect. Instead, a distorted, horrific version of the scientist features as Hodder's villain. In this way, Victorian unease over some of Darwin's ideas is brought to light. At the same time, the appropriation of Darwin's ideas by social Darwinists is also critiqued, with practices such as racial profiling attacked. There is also, on occasion, the suggestion of a contemporary disquiet with some of the recent scientific discoveries relating to genetics, discoveries which do not have their direct origin in Darwin's thinking but which, to some degree, represent a Darwinian legacy. Less reverent than the neo-Victorians, these Steampunk texts have more in common with the scientific romances of their nineteenth-century predecessors, bringing us full circle back to Wells.

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[1] Mark Hodder, *The Strange Affair of Spring Heeled Jack*, p. 211.
[2] VanderMeer and Chambers, p. 9.
[3] Brian J. Robb, *Steampunk: An Illustrated History of Fantastical Fiction, Fanciful Film and Other Victorian Visions* (London: Voyageur Press, 2012), p. 62.
[4] Ekaterina Sedia, 'Steampunk: Looking to the Future Through the Lens of the Past', in *The Mammoth Book of Steampunk*, ed. by Sean Wallace (London: Robinson, 2012), pp. 1-3

(pp. 1-2); Rachel A. Bowser and Brian Croxall, 'Introduction: Industrial Evolution', *Neo Victorian Studies*, 3.1 (2010), 1-45 (p. 29).

[5] Robb, p. 9.
[6] Robb, pp. 10-11.
[7] Sedia, p. 2.
[8] Scott Westerfeld, *Leviathan* (London: Simon and Schuster, 2009), pp. 88-9; Scott Westerfeld, *Behemoth* (London: Simon and Schuster, 2010), pp. 200-1.
[9] Westerfeld, *Leviathan*, p. 101; Westerfeld, *Behemoth*, p. 13.
[10] Hodder, p. 97.
[11] Hodder, p. 38.
[12] Westerfeld, *Leviathan*, p. 101.
[13] K.W. Jeter, *Morlock Night* (Oxford: Angry Robot, 2011), p. 56.
[14] Jeter, p. 67.
[15] Jeter, p. 253.
[16] Jeter, p. 165.
[17] Jeter, pp. 65, 218.
[18] Jeter, p. 203.
[19] Hodder, p. 32.
[20] Ibid.
[21] Hodder, pp. 32-33.
[22] Hodder, p. 97.
[23] Hodder, p. 105.
[24] Hodder, p. 239.
[25] Ibid.
[26] Ibid.
[27] Hodder, p. 108.
[28] Westerfeld, *Leviathan*, pp. 28-32, 72, 75.
[29] Westerfeld, *Goliath*, p. 379.
[30] Westerfeld, *Behemoth*, pp. 13, 169, 234, 107.
[31] Hodder, in Brian J. Robb, *Steampunk: An Illustrated History of Fantastical Fiction, Fanciful Film and Other Victorian Visions* (London: Aurum Press, 2012), pp. 10-11.
[32] Westerfeld, *Leviathan*, p. 71.
[33] Westerfeld, *Leviathan*, p. 192.
[34] Michael Ruse, *The Gaia Hypothesis* (London: University of Chicago Press, 2013), pp. 22, 14.
[35] Norma Kent, 'The Green Movement', *Community College Journal* 79.2.4 (2008).
[36] Hodder, p. 268.
[37] Jeter, p. 204.
[38] Jeter, pp. 252-3.
[39] Hodder, pp. 204-5.
[40] Hodder, p. 42.
[41] Hodder, p. 50.
[42] Hodder, p. 43.
[43] Hodder, p. 64.
[44] Hodder, p. 47.
[45] Hodder, p. 64.
[46] Hodder, p. 179.
[47] Jeter, p. 22.
[48] Jeter, pp. 47, 116.
[49] Jeter, p. 153.
[50] Jeter, p. 48.
[51] Hodder, p. 205.
[52] Charles Darwin, *The Descent of Man and Selection in Relation to Sex* (Champaign, IL: Project Gutenberg, 2013), p. 208.
[53] Hodder, p. 159.
[54] Hodder, p. 363.
[55] Hodder, p. 103.
[56] Hodder, pp. 115, 125.
[57] Hodder, p. 21.
[58] Ibid.
[59] Hodder, p. 22.
[60] Hodder, p. 109.
[61] Hodder, p. 139.

[62] Hodder, pp. 166-8, 287.
[63] Hodder, pp. 287, 295, 323, 324.
[64] Hodder, pp. 213, 221.
[65] Hodder, p. 306.
[66] Ibid.
[67] Hodder, pp. 353, 359.
[68] Scott Westerfeld, *Leviathan*, pp. 193-4
[69] Ibid.
[70] Westerfeld, *Behemoth*, p. 236.
[71] Westerfeld, *Leviathan*, p .101.
[72] Darwin, *Descent*, chap. 2.
[73] Charles Darwin, *On the Origin of Species* (London: John Murray, 1859), chap 4.
[74] Jeter, p. 18.
[75] Jeter, p. 186.
[76] Jeter, pp. 48, 167.
[77] Hodder, pp. 97-8.
[78] Hodder, pp. 187, 191.
[79] Jeter, p. 50.
[80] Jeter, pp. 289-90.

Conclusion

The core focus of this thesis is Charles Darwin's literary influence on Victorian and neo-Victorian fiction. Since the publication of his book *On the Origin of Species by Means of Natural Selection* in 1859, Darwin has been a pivotal figure in both the scientific community, and the way in which wider society thinks about the issues of human origins and the interconnectedness of the natural world. The chief theory outlined in *The Origin* was that of evolution by natural selection, whereby all extant species have come into being through a process of successive changes over several hundred millennia. Darwin thus fuelled the fire ignited by Charles Lyell, who had already put forward geological evidence for an ancient Earth. The implications that Darwin's theory had for Victorian society were staggering, as the biblical story of Genesis had been widely accepted as fact until Darwin's theories suggested otherwise.

The Origin also outlines Darwin's speculations on the struggle for existence, reversion, and extinction. Whilst the struggle for existence appears to have been readily accepted, the concept of reversion provoked anxiety due to a widespread misinterpretation of its implications for humanity, with fears of devolution and regression undermining Victorian ideas of progress. Extinction was also a controversial theory, in a large part due to the way in which it ties into the concept of a non-biblical development of Earth and the natural world.

Darwin's second tome, *The Descent of Man*, created an uproar as it suggested that humanity is related to apes, animals which were widely considered to be 'lower' and 'dirty'. This idea, which I have discussed under the heading of 'the history of humanity' in each chapter, is the core focus of *The Descent*.

The extent of Darwin's literary influence is demonstrated by the way in

which nineteenth-century writers of fiction engaged with his theories, both consciously and unconsciously. Nineteenth-century texts focused on Darwin typically reflect the fear and anxiety stemming from Darwin's publications. The idea of devolution was spawned from Darwin's reversion concept. The widespread misinterpretation that evolution could go backwards, or degenerate humans into 'lower' forms provoked much fear and anxiety, and thus Victorian novels dedicate a considerable amount of time to addressing the fallacy of such pseudo-scientific beliefs.

The Victorian authors considered in this thesis are writers of scientific romances and gothic fiction, genres chosen for their blend of scientific discourse and fantasy. Darwin's influence on Victorian social-realist authors such as George Eliot and Thomas Hardy has been well-traversed, but there are many fresh discoveries to be made about Darwin's presence in texts which fuse the scientific with the fantastical and the supernatural. Whilst all of these authors are well known, the amount of scholarship about Darwin's influence on some of their texts is currently minimal.

Bram Stoker's Count Dracula, for example, has long been considered a product of devolution, but I argue that he is subject to Darwinian evolution. Likewise, instead of reading Robert Louis Stevenson's *Jekyll and Hyde* as a study of human monstrosity, I view Jekyll and Hyde through a Darwinian lens. In so doing I offer a somewhat radical reappraisal of the gothic villain, suggesting that Hyde should be regarded as an evolved form rather than a degenerate throwback.

My discussion of Charles Kingsley offers a necessary reminder that Kingsley was aware of the scientific thinking of his day, as demonstrated by the way in which he reconciles religion and science in *The Water Babies.* The water may be viewed in biblical terms as a baptism to a new life, but in Darwinian terms

it showcases the way in which organisms need to adapt in order to survive unfamiliar environments. A similar duality is evident in my analysis of the way in which Samuel Butler's 'Book of Machines' provides a non-organic parallel to Darwin's theory of evolution, which functions both as a warning against selective breeding, and a celebration of Darwin's breakthrough scientific ideas.

Of the Victorian novelists profiled in this thesis, H.G. Wells and Arthur Conan Doyle prove to be the most overt proponents of Darwinian theories. My analysis of their texts draws on existing scholarship, but directs attention to the specifics of Darwin's argument, which are sometimes side-lined. Rather than discuss evolution in general terms, I take a new approach by looking for evidence of six key Darwinian themes within the texts. As a result I am more alert to nuance, and the sometimes ambivalent relationship that these authors have with Darwin.

In contrast to the wealth of scholarship on many of the nineteenth-century texts, little has been published about the Darwin influence on more contemporary reimaginings of the past. In the second half of my thesis I turn to the way in which Darwin's legacy continues to haunt and inspire writers of fiction. I deliberately jump forward in time to the late twentieth and early twenty-first centuries in order to contrast Victorian attitudes towards Darwin with more recent perspectives. Given my core focus on texts with a nineteenth-century setting and aesthetic, it is in the work of neo-Victorian novelists, and the fiction of practitioners of the related off-shoot of Steampunk, that contemporary views of Darwin are to be found. While Darwin was a significant influence on twentieth century science fiction authors such as Aldous Huxley, the non-Victorian setting of these works excluded them from my analysis. The neo-Victorian novels profiled in this thesis typically adopt a biographical and metafictional approach to Darwin.

Neo-Victorian authors John Fowles, A.S. Byatt, Harry Thompson, and Thom Conroy write with a self-conscious awareness of the gap between the Victorian period and our own. Issues surrounding gender and "race" are especially topical, whilst the theories of reversion and extinction are ignored, as they no longer evoke unease. The contemporary acceptance of Darwin's theories is evident due to a lack of emphasis on fear and anxiety. Whilst these neo-Victorian authors explore similar issues to their Victorian predecessors, there is more of a complementary tone and outlook when discussing Darwin and his scientific legacy.

One exception to this adulatory view of Darwin in neo-Victorian fiction is John Darnton's *The Darwin Conspiracy*. Darwin's history is subverted in this novel, and he becomes a plagiarist and a villain. The text is written in a more playful spirit than its contemporaries, foreshadowing the rise of Steampunk literature. Mark Hodder depicts Darwin as even more villainous in *Spring Heeled Jack*, which also serves as an irreverent adaptation of Darwin's theories, particularly in regards to eugenically selected animals. K.W. Jeter is also fuelled by the spirit of madcap adventure, with *Morlock Night* providing a fusion of Arthurian legend, Wellsian tropes, and Darwinian ideas. Scott Westerfeld proves just as adventurous, but treats Darwin's theories with much more respect. The entangled bank is advocated through the imagery of the Leviathan ship and its ecosystem of animals, a concept which also has parallels with the Gaia hypothesis and the green movement.

As long as Darwin's fictional legacy continues, so too should the relevant scholarship, because

From so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved.[1]

[1] Charles Darwin, *On the Origin of Species*, ed. by Jim Endersby (Cambridge: Cambridge University Press, 2009), p. 376. My italics and bold.

Bibliography

Anic, Stefani F., *Darwinism in the Selected Works of Thomas Hardy* (Johannesburg: Rand Afrikaans University, 2003)

Austen, Peter T., 'Our Struggle for Existence', *The North American Review*, 149. 393 (1889), 248-250

Beer, Gillian, *Darwin's Plots: Evolutionary Narrative in Darwin, George Eliot and Nineteenth Century Fiction* (Cambridge: Cambridge University Press, 2000)

Birch, Dinah, *The Oxford Companion to English Literature*, 2nd edn (Oxford: Oxford University Press, 2009)

Blasingame, James, 'Behemoth by Scott Westerfeld', *Journal of Adolescent & Adult Literacy*, 54.8 (2011), 631-2

Blinderman, Charles S., 'Vampurella: Darwin and Count Dracula', *The Massachusetts Review,* 1.2 (1980), 411-28

Block, Jr., Ed, 'James Sully, Evolutionist Psychology, and Late Victorian Gothic Fiction', *Victorian Studies*, 25.4 (1982), 443-467

Bormann, Daniel Candel, *The Articulation of Science in the Neo-Victorian Novel: A Poetics (And Two Case-Studies)* (Frankfurt am Main: Peter Lang, 2002)

Botting, Fred, *Gothic*, 2nd edn (London: Routledge, 2014)

Bowser, Rachel A., and Brian Croxall, 'Introduction: Industrial Evolution', *Neo-Victorian Studies* 3.1 (2010), 1-45

Breuer, Hans-Peter, 'Samuel Butler's "The Book of the Machines" and the Argument from Design', *Modern Philology*, 72.4 (1975), 365-83

Butler, Samuel, *Erewhon*, ed. by Peter Mudford (London: Penguin, 1985)

Byatt, A.S., *Angels and Insects* (London: Chatto and Windus, 1992)

Byron, Glennis, and David Punter, *The Gothic* (Oxford: Blackwell, 2004)

Carey, Glenn O., 'Samuel Butler's Theory of Evolution: A Summary', *English Literature in Transition, 1820-1920*, 7.4 (1964)

Conroy, Thom, *The Naturalist* (Auckland: Random House, 2014)

Costa de Beauregard, Raphaëlle, 'Darwin, Polanski and Thomas Hardy's Tess of the D'Urbervilles: Facts and Metaphors', *Miranda*, 1 (2010), 1-26

Couprie, Dirk L., Gerard Naddaf, and Robert Hahn, *Anaximander in Context: New Studies in the Origins of Greek Philosophy* (New York: State University of New York Press, 2002)

Dante, *The Divine Comedy*, trans. by Henry Wadsworth Longfellow (Champaign, IL: Project Gutenberg, 1997)

Darnton, John, *The Darwin Conspiracy* (New York: Random House, 2005)

Darrow, George McMillan, *The Strawberry: History, Breeding, and Physiology* (Austin, TX: Holt Rinehart & Winston, 1966)

Darwin, Charles, *The Descent of Man and Selection in Relation to Sex* (Champaign, IL: Project Gutenberg, 2013)

—, *The Descent of Man and Selection in Relation to Sex* (London, John Murray, 1906)

—, *On the Origin of Species*, ed. by Jim Endersby (Cambridge: Cambridge University Press, 2009)

—, *On the Origin of Species or the Preservation of Favoured Races in the Struggle for Life* (London: John Murray, 1859)

—, *The Voyage of the Beagle*, ed. by H. Graham Cannon (Dent: Everyman, 1959)

Darwin, Francis, and A.C. Steward, eds., *More Letters of Charles Darwin* (Champaign, IL: Project Gutenberg, 2013)

Dougherty, Michael J., 'Is the Human Race Evolving or Devolving?', *Scientific American* (1998), 1

Doyle, Arthur Conan, *The Lost World of Arthur Conan Doyle*, Collector's Anniversary Edition, ed. by John R. Lavas, illus. by John R. Lavas and Zdeněk Burian (Auckland: J.R. Lavas, 2002)

Ferrer-Medina, Patricia, 'Wild Humans: *The Culture/Nature Duality in Marie Darrieussecq's* Pig Tales *and Robert Louis Stevenson's* Dr. Jekyll and Mr Hyde', *The* Comparatist, 31 (2007), 67-87

Fisher, Joseph, 'The History of Landholding in Ireland', *Transactions of the Royal Historical Society*, 5 (1877), 228–326

Fowles, John, *The French Lieutenant's Woman* (London: Jonathan Cape, 1969)

Frängsmyr, Tore, ed., *Linnaeus: The Man and His Work* (Sagamore Beach, MA: Science History Publications, 1983)

Glendening, John, *Evolutionary Imagination in Late-Victorian Novels* (Farnham: Ashgate, 2007)

—, *Science, Religion, and the Neo-Victorian Novel: Eye of the Ichthyosaur* (New York: Routledge, 2013)

Greene, John C., 'Darwin as a Social Evolutionist', *Journal of the History of Biology*, 10:1 (1977), 1-27

Hadley, Louisa, *Neo-Victorian Fiction and Historical Narrative: The Victorians and Us* (Hampshire: Palgrave MacMillan, 2010)

Hamlin, Christopher, 'From Being Green to Green Being', *Victorian Studies*, 54.2 (2012), 255-281

Hansson, Heidi, 'The Double Voice of Metaphor: A.S. Byatt's "Morpho Eugenia"', *Twentieth Century Literature*, 45.4 (1999), 453-466

Heilmann, Ann, and Mark Llewellyn, *Neo-Victorianism: The Victorians in the Twenty-First Century, 1999-2009* (London: Palgrave Macmillan, 2010)

Hellström, Nils Petter, 'Darwin and the Tree of Life: The Roots of the Evolutionary Tree', *Archives of Natural History* 39.2 (2012), 234-52

Holmes, John, *Darwinism in Literature* (Reading: University of Reading, 2014)

Hutchison, Sharla, 'Disease and Degeneration in Marie Corelli's Vendetta', *English Literature in Transition, 1880-1920*, 56.2 (2013), 168-86

Jeter, K.W., *Morlock Night* (Oxford: Angry Robot, 2011)

Kent, Norma, 'The Green Movement', *Community College Journal* 79.2. 4 (2008)

King-Hele, Desmond, 'The 1997 Wilkins Lecture: Erasmus Darwin, the Lunaticks and Evolution', *Notes and Records of the Royal Society of London*, 52.1 (1998), 153-180

The King James Bible Online <http://www.kingjamesbibleonline.org/>

Kingsley, Charles, *The Water Babies* (Champaign, IL: Project Gutenberg, 1997)

—, *The Water Babies*, unabridged, revised (Ware, Hertfordshire Wordsworth Editions, 1994)

Kirchknopf, Andrea, '(Re)workings of Nineteenth Century Fiction: Definitions, Terminology, Contexts', *Neo-Victorian Studies*, 1.1 (2008), 53-80

Kohlke, Marie-Luise, 'Introduction: Speculations on the Neo-Victorian Encounter', *Neo Victorian Studies*, 1.1 (2008), 1-18

Kutschera, U., ‘A comparative analysis of the Darwin-Wallace papers and the development of the concept of natural selection’, *Theory in Biosciences*, 122.4 (2003), 343-59

Lampadius, Stefan, ‘Evolutionary Ideas in Arthur Conan Doyle’s *The Lost World*’, *Der andere Conan Doyle: Internationale* Tagung, 20.21 (2011), 68-97

Landa, José Angel García, ‘Harry Thompson’s This Thing of Darkness: Narrative Anchoring’ (2009), 1-16

Llewellyn, Mark, ‘What is Neo-Victorian Studies?’, *Neo-Victorian Studies*, 1.1 (2008), 164-85

Lyell, Charles, *Principles of Geology*, vol. 1 (Chicago: University of Chicago Press, 1990)

McCarthy, Patrick A., ‘*Heart of Darkness* and the Early Novels of H.G. Wells: Evolution, Anarchy, Entropy’, *Journal of Modern Literature*, 13.1 (1986), 37-60

Miller, Elizabeth, *A Dracula Handbook* (Bloomington IN: Xlibris Corporation, 2005)

Mori, Masahiro, ‘The Uncanny Valley’, trans. by Karl F. MacDorman and Norri Kageki, *IEEE Robotics & Automaton Magazine*, 19.2 (2012), 98-100

Murphy, Ruth, ‘Darwin and 1860s Children’s Literature’, *Journal of Literature and Science*, 5.2 (2012), 5-21

Oldroyd, D. R., *Darwinian Impacts: An Introduction to the Darwinian Revolution* (Milton Keynes: Open University Press, 1980)

Ollivier, F. J., and others, ‘Comparative morphology of the tapetum lucidum (among selected species)’, *Veterinary Ophthalmology*, 7.1 (2004), 11-22

Pickard, Sir Arthur Wallace, ed., and D’Arcy Wentworth Thompson, trans., *Volume 4 of The Works of Aristotle Translated Into English* (Broadbridge: Clarendon Press, 1910)

Pinker, Steven, *The Language Instinct: The New Science of Language and Mind* (London: Penguin, 2000)

Radice, Betty, ed., *Lucretius: On the Nature of the Universe* (London: Penguin Classics, 1951)

Rhee, Jennifer, ‘Beyond the Uncanny Valley: Masahiro Mori and Philip K. Dick’s Do Androids Dream of Electric Sheep?’, *Configurations*, 21.3 (2013), 301-329

Richards, Robert J., *The Tragic Sense of Life: Ernst Haeckel and the Struggle over Evolutionary Thought* (Chicago: University of Chicago Press, 2008)

Richter, Virginia, *Literature After Darwin: Human Beasts in Western Fiction, 1859-1939* (Hampshire: Palgrave Macmillan, 2011)

Robb, Brian J., *Steampunk: An Illustrated History of Fantastical Fiction, Fanciful Film and Other Victorian Visions* (London: Voyageur Press, 2012)

Ruse, Michael, *The Gaia Hypothesis* (London: University of Chicago Press, 2013)

Sarfati, Jonathan, *Refuting Evolution* (Georgia: Creation Book Publishers, 1999)

Schiller, Dana 'The Redemptive Past in the Neo-Victorian Novel', Studies in the Novel, 29:4 (1997), 538-60

Schumacher, Larissa, *Who is the Monster? A Discussion of Monstrosity from Shelley to Stoker* (Dissertation, University of Waikato, 2012)

Smith, M.A., 'George Eliot, Charles Darwin and Nineteenth Century Science', *Journal of the Royal Society of Medicine*, 87.56 (1994), 54

Smith, Michael J., 'Neo-Victorianism: An Introduction', *Australasian Journal of Victorian Studies*, 18.3 (2013), 1-3

Stableford, Brian, *Science Fact and Science Fiction: An Encyclopedia* (London: Routledge, 2015)

—, *Scientific Romance in Britain 1890-1950* (London: Fourth Estate, 1995)

Stevenson, Robert Louis, *Strange Case of Dr Jekyll and Mr Hyde and Other Tales*, ed. by Roger Luckhurst (Oxford: Oxford University Press, 2008)

Stoker, Bram, *Dracula*, ed. by Roger Luckhurst (Oxford: Oxford, 2011)

—, *Bram Stoker's Notes for Dracula: A Facsimile Edition*, ed. by Robert Eighteen Bisang and Elizabeth Miller (Jefferson: McFarland, 2008)

Sturrock, June, 'Angels, Insects, and Analogy: A. S. Byatt's "Morpho Eugenia"', *Connotations*, 12.1 (2002/2003), 93-104

Tassy, Pascal, 'Trees Before and After Darwin', *Journal of Zoological Systematics and Evolutionary Research*, 49.2 (2010), 89-101

Tempelhoff, Johann W., 'Darwin and Eliot in the Plots of Nineteenth-Century Science and Fiction', HNet Online (2001), 1-6

Tennyson, Alfred Lord, 'Locksley Hall Sixty Years After', in *Ballads and Other Poems*, ed. by Hallam Lord Tennyson (London: Macmillan, 1908), 279 304

Thompson, Harry, *This Thing of Darkness* (London: Headline, 2005)

Tinkler-Villani, Valeria, and C.C. Barfoot, eds., *Restoring the Mystery of the Rainbow: Literature's Refraction of Science*, vol.1 (New York: Rodopi, 2011)

Todes, Daniel P., *Darwin Without Malthus: The Struggle for Existence in Russian Evolutionary Thought*, (Oxford: Oxford University Press, July 1989)

VanderMeer, Jeff, and S. J. Chambers, *The Steampunk Bible: An Illustrated Guide to the World of Imaginary Airships, Corsets and Goggles, Mad Scientists, and Strange Literature* (New York: Abrams, 2011)

Weikart, Richard, 'The Origins of Social Darwinism in Germany, 1859-1895', *Journal of the History of Ideas*, 54. 3 (1993), 469-488

Wells, H.G., *The Island of Doctor Moreau* (New York: Duffield and Green, 1933)

—, *The Island of Doctor Moreau* (London, Penguin, 2012)

—, 'On Extinction', *Chambers Journal*, 30 September 1893, 623-24

—, 'On the Extinction of Man', in *H.G. Wells, Early Writings in Science and Science Fiction*, ed. by Robert M. Philmus and David Y. Hughes (Oakland: University of California Press, 1975), 148-151

—, *The Time Machine* (London: Penguin, 2012)

—, *The War of the Worlds* (Camberwell, Victoria: Penguin, 2009)

Westerfeld, Scott, *Behemoth* (London: Simon and Schuster, 2010)

—, *Goliath* (New York: Simon Pulse, 2012)

—, *Leviathan* (London: Simon and Schuster, 2009)

Wilson, Keith, ed., *A Companion to Thomas Hardy* (Oxford: Wiley, 2012)

Winant, Scott, dir., and Nancy Oliver, writ., 'I Will Rise Up', *True Blood* (Your Face Goes Here Entertainment, 2009)

Wright, M.R., *Empedocles: The Extant Fragments* (New Haven, CT: Yale University Press, 1981)